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                  Files
 NEWS  4  Oct 27  SET ABBREVIATIONS and SET PLURALS extended in
                  Derwent World Patents Index files
 NEWS  5  Oct 27  Patent Assignee Code Dictionary now available
                  in Derwent Patent Files
 NEWS  6  Oct 27  Plasdoc Key Serials Dictionary and Echoing added to
                  Derwent Subscriber Files WPIDS and WPIX
 NEWS  7  Nov 29  Derwent announces further increase in updates for DWPI
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=> s fagales allergen

L1 2 FAGALES ALLERGEN

=> d l1 all 1-2

L1 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2000 ACS
AN 1999:614141 CAPLUS
DN 131:241995
TI Mutant recombinant allergens for use as allergy vaccines
IN Ipsen, Hans Henrik; Spangfort, Michael Dho; Larsen, Jorgen Nedergaard
PA Alk-Abello A/S, Den.
SO PCT Int. Appl., 77 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12N015-29
ICS C12N015-12; C07K014-415; C07K014-435; A61K039-35; A61K039-36
CC 15-9 (Immunochemistry)
Section cross-reference(s): 3
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9947680	A1	19990923	WO 1999-DK136	19990316
	W: AE, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ, DE, DE, DK, DK, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 9927147	A1	19991011	AU 1999-27147	19990316
PRAI	DK 1998-364	19980316			
	WO 1999-DK136	19990316			

AB Novel recombinant allergens are disclosed. The allergens are non-naturally occurring mutants derived from naturally-occurring allergens. The overall .alpha.-carbon backbone tertiary structure is essentially preserved. Also disclosed are methods for prepg. such recombinant allergens as well as uses thereof. The invention is based on the idea that the mechanism of successful allergy vaccination is not an alteration of the ongoing Th2-type immune response, but rather a parallel initiation of a new Th1-type immune response involving tertiary epitope recognition by B-cells and antibody formation. Addnl., dominant IgE binding epitopes are proposed. These epitopes are supposed to be constituted by tertiary structure dependent coherent surface areas large

enough to accommodate antibody binding and conserved among isoallergens, variants, and/or homologous allergens from related species. Mutant forms of Bet v 1 and Ves v 5 allergens were produced. The Bet v 1 mutants displayed reduced IgE binding although the tertiary structure of the wild-type Bet v 1 allergen was retained. A "triple-patch mutant" of Bet v 1 was able to induce proliferation in T cell lines from 3 different birch pollen allergic patients with stimulation indexes similar to recombinant and naturally occurring Bet v 1.

ST allergy vaccine allergen mutant B cell epitope IgE binding; Bet v 1 allergen recombinant mutant allergy vaccine; Ves v 5 allergen recombinant mutant allergy vaccine

IT Epitopes
(B cell, mutation of; mutant recombinant allergens for use as allergy vaccines)

IT Allergens
RL: BPN (Biosynthetic preparation); BPR (Biological process); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(Bet v I (Betula verrucosa, I); mutant recombinant allergens for use as allergy vaccines)

IT Immunoglobulins
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(E, binding of, redn. of; mutant recombinant allergens for use as allergy vaccines)

IT Ant (Formicidae)
(Formicoidae; mutant recombinant allergens for use as allergy vaccines)

IT Dicotyledon (Magnoliopsida)
(Oleales; mutant recombinant allergens for use as allergy vaccines)

IT Monocotyledon (Liliopsida)
(Poales; mutant recombinant allergens for use as allergy vaccines)

IT Allergens
RL: BPN (Biosynthetic preparation); BPR (Biological process); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(Ves v 5 (Vespula vulgaris, V); mutant recombinant allergens for use as allergy vaccines)

IT Animal
Apidae
Asterales
Blattaria
Cat (Felis catus)
Dermatophagoides
Dog (Canis familiaris)
Fagales
Horse (Equus caballus)
Hymenoptera
Pinales
Pollen
Urticales
Venoms
Wasp
(**allergens**; mutant recombinant allergens for use as allergy vaccines)

IT Vaccines

(allergy; mutant recombinant allergens for use as allergy vaccines)
IT Tertiary structure
(maintenance of; mutant recombinant allergens for use as allergy vaccines)
IT Allergy inhibitors
(mutant recombinant allergens for use as allergy vaccines)
IT Allergens
RL: BPN (Biosynthetic preparation); BPR (Biological process); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(mutant recombinant allergens for use as allergy vaccines)
IT Protein sequences
(of Bet v 1 and Ves v 5 mutants)
IT 244065-79-0P 244065-81-4P 244065-82-5P 244065-83-6P 244065-84-7P 244065-85-8P 244065-86-9P 244065-87-0P 244065-88-1P 244065-89-2P 244065-90-5P
RL: BPN (Biosynthetic preparation); BPR (Biological process); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(amino acid sequence; mutant recombinant allergens for use as allergy vaccines)
IT 244179-41-7, PN: WO9947680 FIG: 3 unclaimed DNA 244179-50-8, PN: WO9947680 FIG: 3 unclaimed DNA 244179-51-9, PN: WO9947680 FIG: 3 unclaimed DNA 244179-52-0, PN: WO9947680 FIG: 3 unclaimed DNA 244179-54-2, PN: WO9947680 FIG: 3 unclaimed DNA 244179-56-4, PN: WO9947680 FIG: 3 unclaimed DNA 244179-57-5, PN: WO9947680 FIG: 3 unclaimed DNA 244179-58-6, PN: WO9947680 FIG: 3 unclaimed DNA 244179-59-7, PN: WO9947680 FIG: 3 unclaimed DNA 244179-60-0, PN: WO9947680 FIG: 3 unclaimed DNA 244179-61-1, PN: WO9947680 FIG: 3 unclaimed DNA 244179-62-2, PN: WO9947680 FIG: 3 unclaimed DNA 244179-64-4, PN: WO9947680 FIG: 13 unclaimed DNA 244179-67-7, PN: WO9947680 FIG: 13 unclaimed DNA 244179-68-8, PN: WO9947680 FIG: 13 unclaimed DNA
RL: PRP (Properties)
(unclaimed nucleotide sequence; mutant recombinant allergens for use as allergy vaccines)
RE.CNT 6
RE
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L1 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2000 ACS
AN 1993:232158 CAPLUS
DN 118:232158
TI Four recombinant isoforms of Cor a I, the major allergen of hazel pollen, show different IgE-binding properties
AU Breiteneder, Heimo; Ferreira, Fatima; Hoffmann-Sommergruber, Karin; Ebner, Christof; Breitenbach, Michael; Rumpold, Helmut; Kraft, Dietrich;

Scheiner, Otto
CS Inst. Gen. Exp. Pathol., Univ. Vienna, Vienna, A-1090, Austria
SO Eur. J. Biochem. (1993), 212(2), 355-62
CODEN: EJBCAI; ISSN: 0014-2956
DT Journal
LA English
CC 15-9 (Immunochemistry)
Section cross-reference(s): 3, 11
AB Previous studies showed that pollens from trees of the order Fagales (e.g. birch, alder, hazel, and hornbeam) all contain 1 major allergen. These proteins are cross-reactive among these tree species , and .apprx.95% of tree-pollen-allergic patients display IgE binding to these allergens. Using the reported N-terminal amino acid sequence of the hazel pollen allergen Cor a I, it was possible to amplify Cor-.alpha.-I cDNA by use of PCR. Four clones with cDNA inserts were isolated. All 4 clones contained an open reading frame of 477 nucleotides (159 amino acids) but differed in length for their 3'-non-coding regions. Within the overlapping regions, the nucleotide sequence of the 3'-non-coding regions of the 4 clones were nearly identical. The open reading frames coded for different isoforms of the major hazel pollen allergen, Cor a I. The clones were designated Cor a I/5, 6, 11 and 16, resp. Comparison of the deduced amino acid sequences of these Cor a I isoforms revealed identities of 96-99%. The sequence identities between the Cor a I isoforms and Bet v I, the major birch pollen allergen, were 71-73% (80.5-83% similarity). Comparing amino acid sequences of Cor a I isoforms with the published sequences of Aln g I, the major allergen from alder, and Car b I and isoforms, the major allergen from hornbeam, 75.5-76.7% identity (83.6-85% similarity) and 83.6-89.9% sequence identity (89.3-95% similarity), resp., was found. The 4 Cor a I cDNAs were subcloned into plasmid pKK223-3 and expressed in Escherichia coli as non-fusion proteins; their capacity to bind serum IgE from tree-pollen-allergic patients was investigated. The 4 cloned isoforms showed an apparent mol. mass of 17 kDa in SDS/PAGE, identical to the natural, pollen-derived Cor a I. IgE antibodies from tree-pollen-allergic patients reacted with all 4 recombinant isoforms. However, marked differences were noted in the IgE-binding patterns of the distinct isoforms. Furthermore, Cor a I/11 was the only isoform recognized by the anti-(Ber v I) monoclonal antibody, BIP 1. These results demonstrate that Cor a I isoforms display different antigenic and allergenic properties, very likely due to few but significant changes in their amino acid sequences. These findings have implications for the development of reagents for diagnosis and immunotherapy for type I allergies.
ST hazel pollen allergen isoform; Corylus major allergen I sequence
IT **Fagales**
(**allergens** of pollen of, human IgE to, hazel major allergen I isoforms reactivity for)
IT Protein sequences
(for allergen I isoforms of hazel)
IT Immunoglobulins
RL: BIOL (Biological study)
(E, to allergen I of hazel, of humans, isoform reactivity of)

IT Deoxyribonucleic acid sequences
(complementary, for allergen I isoforms of hazel)
IT Allergy
(immediate hypersensitivity, IgE to tree pollen of humans with, hazel major allergen I isoform reactivity of)
IT 143066-17-5, Allergen Cor a I (hazel isoform 1) 143066-18-6, Allergen Cor a I (hazel isoform 2) 143066-19-7, Allergen Cor a I (hazel isoform 3) 143066-20-0, Allergen Cor a I (hazel isoform 4)
RL: PRP (Properties)
(amino acid sequence of)

=> s birch allergen

L2 155 BIRCH ALLERGEN

=> s l2 and beta v1

L3 0 L2 AND BETA V1

=> s l2 and epitope

L4 27 L2 AND EPITOPE

=> dup remove l4

PROCESSING COMPLETED FOR L4
L5 26 DUP REMOVE L4 (1 DUPLICATE REMOVED)

=> d l5 all 1-26

L5 ANSWER 1 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 2000:469064 CAPLUS
DN 133:191900
TI Rapid production of the major birch pollen allergen Bet v 1 in Nicotiana benthamiana plants and its immunological in vitro and in vivo characterization
AU Krebitz, Monika; Wiedermann, Ursula; Essl, Dagmar; Steinkellner, Herta; Wagner, Birgit; Turpen, Thomas H.; Ebner, Christof; Scheiner, Otto; Breiteneder, Heimo
CS Department of Pathophysiology, University of Vienna, Vienna, 1090, Austria
SO FASEB J. (2000), 14(10), 1279-1288
CODEN: FAJOEC; ISSN: 0892-6638
PB Federation of American Societies for Experimental Biology
DT Journal
LA English
CC 15-9 (Immunochemistry)
AB Type I allergies are immunol. disorders that afflict a quarter of the world's population. Improved diagnosis of allergic diseases and the formulation of new therapeutic approaches are based on the use of recombinant allergens. The authors describe here for the first time the application of a rapid plant-based expression system for a plant-derived allergen and its immunol. characterization. The authors expressed the authors' model allergen Bet v 1, the major birch pollen allergen, in the tobacco-related species Nicotiana benthamiana using a tobacco mosaic virus

vector. Two weeks post-inoculation, plants infected with recombinant viral RNA contg. the Bet v 1 coding sequence accumulated the allergen to levels of 200 .mu.g/g leaf material. Total non-purified protein exts. from plants were used for immunol. characterizations. IgE immunoblots and ELISA inhibition assays showed comparable IgE binding properties for tobacco recombinant (r) Bet v 1 and natural (n) Bet v 1, suggesting that the B cell **epitopes** were preserved when the allergen was expressed in N. benthamiana plants. Using a murine model of type I allergy, mice immunized with crude leaf exts. contg. Bet v 1 with purified rBet v 1 produced in E. coli or with birch pollen ext. generated comparable allergen-specific IgE and IgG1 antibody responses and pos. type I skin test reactions. These results demonstrate that non-purified Bet v 1 overexpressed in N. benthamiana has the same immunogenicity as purified Bet v 1 produced in E. coli or nBet v 1. The authors therefore conclude that this plant expression system offers a viable alternative to fermn.-based prodn. of allergens in bacteria or yeasts. In addn., there may be a broad utility of this system for the development of new and low-cost vaccination strategies against allergy.

ST Bet v1 allergen tobacco; **birch allergen** Nicotiana

IT Allergens
RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(Bet v I (Betula verrucosa, I); prepn. and immunol. characterization of birch pollen allergen from tobacco)

IT Immunoglobulins
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(E; to tobacco-derived birch pollen allergen)

IT Immunoglobulins
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(G1; to tobacco-derived birch pollen allergen)

IT Tobacco mosaic virus
(as vector for expression of birch pollen allergen in Nicotiana benthamiana)

IT Tobacco (Nicotiana benthamiana)
(prepn. and immunol. characterization of birch pollen allergen from)

IT Birch (Betula)
(prepn. and immunol. characterization of birch pollen allergen from tobacco)

IT Virus vectors
(tobacco mosaic virus as vector for expression of birch pollen allergen in Nicotiana benthamiana)

RE.CNT 41

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L5 ANSWER 2 OF 26 MEDLINE
AN 1999384123 MEDLINE
DN 99384123
TI Blocking antibodies induced by specific allergy vaccination prevent the activation of CD4+ T cells by inhibiting serum-IgE-facilitated allergen presentation.
AU van Neerven R J; Wikborg T; Lund G; Jacobsen B; Brinch-Nielsen A; Arnved J; Ipsen H
CS ALK-Abello, Horsholm, Denmark; and Lung and Allergy Clinic, Copenhagen, Denmark.. joost-vanneerven@tanox.nl
SO JOURNAL OF IMMUNOLOGY, (1999 Sep 1) 163 (5) 2944-52.
Journal code: IFB. ISSN: 0022-1767.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals; Cancer Journals
EM 199911
EW 19991104
AB Allergen-specific CD4+ T lymphocytes are activated at extremely low allergen concentrations in vivo as a result of serum-facilitated allergen presentation (S-FAP). It is not clear at present if specific allergy vaccination (SAV) has an effect on this mechanism. Here we show that **birch allergen**-specific serum-IgE facilitates the presentation of Bet v 1, the major birch pollen allergen, to Bet v 1-specific CD4+ T lymphocytes by a factor of >100. This process is CD23 mediated, could be detected in sera from the majority of birch-allergic

patients, and was clearly dose dependent. S-FAP of Bet v 1 was inhibited in patients undergoing long-term birch SAV, but not by sera from patients undergoing grass SAV, indicating that birch-specific Abs are involved. This resulted in decreased proliferation and IL-4, IL-5, IL-10, and IFN-gamma production of Bet v 1-specific T cells. The inhibition was already noted after 3-9 mo of SAV and could not be solely explained by increased serum levels of birch-specific IgG4. When IgG- and IgA/IgM-containing fractions of long-term SAV sera were used to inhibit S-FAP, only IgG-containing fractions were shown to inhibit S-FAP. These results indicate that blocking IgG Abs induced by SAV inhibits the occurrence of S-FAP at very low allergen concentrations, resulting in significantly higher allergen threshold levels to obtain T cell proliferation and cytokine production and thus allergen-induced late-phase responses.

CT Check Tags: Human
*Allergens: IM, immunology
Allergens: ME, metabolism
Antibodies, Anti-Idiotypic: PH, physiology
*Antibodies, Blocking: BI, biosynthesis
*Antibodies, Blocking: PH, physiology
*Antigen Presentation: IM, immunology
Antigens, CD19: IM, immunology
Body Temperature
Cells, Cultured
*CD4-Positive T-Lymphocytes: IM, immunology
CD4-Positive T-Lymphocytes: ME, metabolism
Desensitization, Immunologic
Epitopes, T-Lymphocyte: IM, immunology
*IgE: BL, blood
IgE: IM, immunology
IgE: PH, physiology
IgG: BL, blood
IgG: IM, immunology
Immune Sera: PH, physiology
*Lymphocyte Transformation: IM, immunology
*Plant Proteins: IM, immunology
Plant Proteins: ME, metabolism
Receptors, IgE: IM, immunology
Trees: IM, immunology

RN 126161-14-6 (BetvI protein); 37341-29-0 (IgE)
CN 0 (anti-IgE); 0 (anti-IgG); 0 (Allergens); 0 (Antibodies, Anti-Idiotypic); 0 (Antibodies, Blocking); 0 (Antigens, CD19); 0 (**Epitopes**, T-Lymphocyte); 0 (IgG); 0 (Immune Sera); 0 (Plant Proteins); 0 (Receptors, IgE)

L5 ANSWER 3 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 1999:273002 CAPLUS
DN 131:115196
TI Identification of a highly promiscuous and an HLA allele-specific T-cell **epitope** in the birch major allergen Bet v 1: HLA restriction, **epitope** mapping and TCR sequence comparisons
AU Friedl-Hajek, R.; Spangfort, M. D.; Schou, C.; Breiteneder, H.; Yssel, H.; Van Neerven, R. J. Joost
CS Department of General and Experimental Pathology, Vienna, Austria

SO Clin. Exp. Allergy (1999), 29(4), 478-487
CODEN: CLEAEN; ISSN: 0954-7894
PB Blackwell Science Ltd.
DT Journal
LA English
CC 15-9 (Immunochemistry)
Section cross-reference(s): 3
AB Background: allergen-specific CD4+ T cells play an important regulatory role in atopic allergy. Objective: to investigate the human leukocyte antigen (HLA) restriction and T-cell receptor (TCR) usage of allergen-specific T-cell clones (TCCs) that react with defined **epitopes** of Bet v 1, the major birch pollen allergen. Methods: five Bet v 1-specific TCCs derived from two birch pollen-allergic individuals and specific for Bet v 1, were **epitope**-mapped with overlapping synthetic peptides. In addn., HLA-restriction and TCR CDR3 sequences were detd. Results: three TCCs reacted with a Bet v 1 peptide contg. amino acid residues 21-33 (BP21), the other two TCCs reacted with a minimal peptide comprising residues 37-45 (BP37). Studies using neutralizing anti-HLA-monoclonal antibodies and HLA-typed APCs showed that the BP37-specific TCCs were restricted by a HLA-DQA1*0301/DQB1*0603 heterodimer. In contrast, BP21 was recognized in a highly promiscuous manner. TCCs recognizing this sequence were restricted by HLA-DPB1*0201, a HLA-DQA1*0201/DQB1*0201 heterodimer, or HLA-DRB3*0101. Reverse transcription-polymerase chain reaction with primers for all known TCRAV and TCRBV gene segments, followed by CDR3 region sequencing, revealed the usage of five different TCRAV and four different TCRBV gene segments by the TCCs, as well as diversity in the joining region. All BP21-specific TCCs contained a neg. charged residue in their CDR3.alpha. regions, the CDR3.beta. regions showed a high concn. of polar and OH-group bearing residues. BP37-specific TCCs shared the amino acid combination LY in the middle of their CDR3.alpha. regions, the CDR3.beta. regions showed high concn. of OH-group bearing or charged residues. Conclusions: this study shows the existence of a highly promiscuous T-cell **epitope** in Bet v 1. The presence of addnl. T-cell **epitopes** in Bet v 1 may, however, hamper the clin. applicability of the **epitope**. Likewise, the diversity in TCR usage by T cells recognizing the **epitope** does not support the development of TCR-directed immunotherapy for birch pollen allergy.
ST **birch allergen** Betv1 T cell **epitope** HLA restriction; TCR receptor cDNA sequence **birch allergen** human
IT Allergens
RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence);
PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(Bet v 1 (Betula verrucosa, 1); highly promiscuous and human HLA allele-specific T-cell **epitope** in birch major allergen Bet v 1 and HLA restriction, **epitope** mapping and TCR sequence comparisons)
IT Histocompatibility antigens
RL: ADV (Adverse effect, including toxicity); BPR (Biological process); BIOL (Biological study); PROC (Process)
(HLA-DP; highly promiscuous and human HLA allele-specific T-cell **epitope** in birch major allergen Bet v 1 and HLA restriction, **epitope** mapping and TCR sequence comparisons)
IT Gene, animal

RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(HLA-DPB1; highly promiscuous and human HLA allele-specific T-cell **epitope** in birch major allergen Bet v 1 and HLA restriction, **epitope** mapping and TCR sequence comparisons)

IT Histocompatibility antigens
RL: ADV (Adverse effect, including toxicity); BPR (Biological process); BIOL (Biological study); PROC (Process)
(HLA-DQ; highly promiscuous and human HLA allele-specific T-cell **epitope** in birch major allergen Bet v 1 and HLA restriction, **epitope** mapping and TCR sequence comparisons)

IT Gene, animal
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(HLA-DQA1; highly promiscuous and human HLA allele-specific T-cell **epitope** in birch major allergen Bet v 1 and HLA restriction, **epitope** mapping and TCR sequence comparisons)

IT Gene, animal
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(HLA-DQB1; highly promiscuous and human HLA allele-specific T-cell **epitope** in birch major allergen Bet v 1 and HLA restriction, **epitope** mapping and TCR sequence comparisons)

IT Histocompatibility antigens
RL: ADV (Adverse effect, including toxicity); BPR (Biological process); BIOL (Biological study); PROC (Process)
(HLA-DR; highly promiscuous and human HLA allele-specific T-cell **epitope** in birch major allergen Bet v 1 and HLA restriction, **epitope** mapping and TCR sequence comparisons)

IT Gene, animal
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(HLA-DRB3; highly promiscuous and human HLA allele-specific T-cell **epitope** in birch major allergen Bet v 1 and HLA restriction, **epitope** mapping and TCR sequence comparisons)

IT Allergy
(atopy; highly promiscuous and human HLA allele-specific T-cell **epitope** in birch major allergen Bet v 1 and HLA restriction, **epitope** mapping and TCR sequence comparisons)

IT Peptides, biological studies
RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence);
PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(**epitope**; highly promiscuous and human HLA allele-specific T-cell **epitope** in birch major allergen Bet v 1 and HLA restriction, **epitope** mapping and TCR sequence comparisons)

IT Alleles
Birch (Betula pendula)
CD4-positive T cell
MHC restriction
Protein sequences
cDNA sequences
(highly promiscuous and human HLA allele-specific T-cell **epitope** in birch major allergen Bet v 1 and HLA restriction, **epitope** mapping and TCR sequence comparisons)

IT Gene, animal
TCR .alpha..beta. (receptor)
RL: BOC (Biological occurrence); PRP (Properties); BIOL (Biological

study); OCCU (Occurrence)
(highly promiscuous and human HLA allele-specific T-cell **epitope** in birch major allergen Bet v 1 and HLA restriction, **epitope** mapping and TCR sequence comparisons)
IT **Epitopes**
(mapping; highly promiscuous and human HLA allele-specific T-cell **epitope** in birch major allergen Bet v 1 and HLA restriction, **epitope** mapping and TCR sequence comparisons)
IT **Epitopes**
(peptide; highly promiscuous and human HLA allele-specific T-cell **epitope** in birch major allergen Bet v 1 and HLA restriction, **epitope** mapping and TCR sequence comparisons)
IT 232260-84-3 232260-85-4
RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence);
PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(**epitope**; highly promiscuous and human HLA allele-specific T-cell **epitope** in birch major allergen Bet v 1 and HLA restriction, **epitope** mapping and TCR sequence comparisons)
IT 199415-74-2, GenBank Y15198 199415-75-3, GenBank Y15199 199415-76-4, GenBank Y15200 199415-77-5, GenBank Y15201 199415-78-6, GenBank Y15202
199415-79-7, GenBank Y15203 199415-80-0, GenBank Y15204 199415-81-1, GenBank Y15205 199415-82-2, GenBank Y15206 199415-83-3, GenBank Y15207
RL: PRP (Properties)
(nucleotide sequence; highly promiscuous and human HLA allele-specific T-cell **epitope** in birch major allergen Bet v 1 and HLA restriction, **epitope** mapping and TCR sequence comparisons)
RE.CNT 35
RE
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L5 ANSWER 4 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
AN 2000:9412 BIOSIS
DN PREV200000009412
TI Pollen-related food allergy: Cloning and immunological analysis of isoforms and mutants of Mal d 1, the major apple allergen, and Bet v 1, the major birch pollen allergen.
AU Son, D. Y.; Scheurer, S.; Hoffmann, A.; Haustein, D.; Vieths, S. (1)
CS (1) Department of Allergology, Paul-Ehrlich-Institut, Paul-Ehrlich-Str. 51-59, D-63225, Langen Germany
SO European Journal of Nutrition, (Aug., 1999) Vol. 38, No. 4, pp. 201-215. ISSN: 1436-6207.
DT Article
LA English
SL English
AB Background: Mal d 1, the major apple allergen, cross-reacts with IgE specific for the major birch pollen allergen, Bet v 1, and is responsible for birch pollen related food allergy to apple. Isoforms of Bet v 1 showing minor sequence variations display different binding capacity for specific IgE antibodies from allergic patients. Moreover, strain-dependent variation of allergenicity has been reported for apples. Objective: To investigate the occurrence of strain-dependent isoforms of Mal d 1 which may differ in their allergenic potential, to obtain data on structures essential for binding of Mal d 1 to the antibody, and to gain insights into the structures responsible for its IgE cross-reactivity to Bet v 1. Methods: The cDNA of Mal d 1 from various apple strains was amplified by a PCR strategy based on conserved regions of known Mal d 1-sequences, and sequenced. Two major isoforms of Mal d 1 were expressed as recombinant proteins and purified, as were different variants of the major b irch pollen allergen, Bet v 1. Together with already existing recombinant birch pollen and apple allergens, these were subjected to allergenicity testing by IgE-immunoblotting, enzyme allergo sorbent test and dose related mediator release. "Hot-spots" for IgE-reactivity were identified by site-directed mutagenesis. Results: Twelve Mal d 1-clones were sequenced from 7 apple varieties and compared to 3 known Mal d 1 sequences. The clones were clustered into two groups, each showing a high degree of sequence identity to one of the known sequences and specific differences to the third sequence. No strain-specific sequences were identified. In contrast, apple strains with reported differences in allergenicity showed different expression levels of the major allergen. Immunologic testing of recombinant allergens revealed high IgE binding capacity of 2 major isoforms, named GD26 and GS29, with a slightly higher IgE binding capacity of GD26. Moreover, the allergenicity was similar to another rM al d 1 reported in the literature, representing the isoform divergent from our

clones. Mutational analysis of our Mal d 1 allergens identified serine in position 111 as essential for IgE binding. Allergenicity was almost depleted by changing this residue into a proline. Moreover, the corresponding serine residue, present in position 112 of Bet v 1, was in a similar manner crucial for the allergenicity of the birch pollen allergen.
Conclusion: We conclude that divergent allergenicity of apple strains mainly depends on different expression levels of the major allergen. Introduction of a proline residue in position 111 of Mal d 1 and in position 112 of Bet v 1 led to a drastic reduction of allergenicity of both the pollen and the food allergen, obviously also removing the cross-reactive **epitope**. Mutants with reduced IgE-reactivity but maintained T-cell reactivity may represent new candidates for a safer specific immunotherapy with reduced side-effects.
CC Nutrition - General Studies, Nutritional Status and Methods *13202
Genetics and Cytogenetics - General *03502
Biochemical Studies - General *10060
Immunology and Immunochemistry - General; Methods *34502
Allergy *35500
Food Technology - General; Methods *13502
Biophysics - General Biophysical Studies *10502
BC Hominidae 86215
IT Major Concepts
Molecular Genetics (Biochemistry and Molecular Biophysics); Immune System (Chemical Coordination and Homeostasis); Foods; Nutrition
IT Chemicals & Biochemicals
Bet v 1: allergen, expression, immunological analysis, major **birch allergen**, molecular cloning; IgE [immunoglobulin E]; Mal d 1: allergen, expression, immunological analysis, major apple allergen, molecular cloning
IT Methods & Equipment
PCR [polymerase chain reaction]: DNA amplification method; SDS-PAGE [SDS-polyacrylamide gel electrophoresis]: separation method; Western blotting: detection method; site-directed mutagenesis: genetic method
IT Miscellaneous Descriptors
food allergy: pollen-related
ORGN Super Taxa
Hominidae: Primates, Mammalia, Vertebrata, Chordata, Animalia; Muridae:
Rodentia, Mammalia, Vertebrata, Chordata, Animalia
ORGN Organism Name
BALB/c mouse (Muridae); human (Hominidae): patient
ORGN Organism Superterms
Animals; Chordates; Humans; Mammals; Nonhuman Mammals; Nonhuman Vertebrates; Primates; Rodents; Vertebrates

L5 ANSWER 5 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 1997:232478 CAPLUS
DN 126:304872
TI Conversion of the major birch pollen allergen, Bet v 1, into two nonanaphylactic T-cell **epitope**-containing fragments. Candidates for a novel form of specific immunotherapy
AU Vrtala, Susanne; Hirtenlehner, Kora; Vangelista, Luca; Pastore, Annalisa; Eichler, Hans-Georg; Sperr, Wolfgang R.; Valent, Peter; Ebner, Christof; Kraft, Dietrich; Valenta, Rudolf
CS Department of Immunopathology, Institute of General and Experimental Pathology, AKH, University of Vienna, Vienna, A-1090, Austria

SO J. Clin. Invest. (1997), 99(7), 1673-1681
CODEN: JCINAO; ISSN: 0021-9738
PB Rockefeller University Press
DT Journal
LA English
CC 15-9 (Immunochemistry)
AB A novel approach to reduce the anaphylactic activity of allergens is suggested. The strategy makes use of the presence of conformational IgE **epitopes** on one of the most common allergens. The three dimensional structure of the major birch pollen allergen, Bet v 1, was disrupted by expressing two parts of the Bet v 1 cDNA representing amino acids 1-74 and 75-160 in Escherichia coli. In contrast to the complete recombinant Bet v 1, the fragments showed almost no allergenicity and exhibited random coil conformation as analyzed by CD. Both nonanaphylactic fragments induced proliferation of human Bet v 1-specific T cell clones, indicating that they harbored all dominant T cell **epitopes** and therefore may be considered as a basis for the development of a safe and specific T cell immunotherapy.
ST **birch allergen** conversion anaphylactic activity; immunotherapy allergen conversion T cell **epitope**
IT Allergens
RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); RCT (Reactant); BIOL (Biological study); PREP (Preparation)
(Bet v I (Betula verrucosa, I), recombinant fragments; conversion of the major birch pollen allergen, Bet v 1, into two nonanaphylactic T cell **epitope**-contg. fragments and specific immunotherapy)
IT Anaphylaxis
Conformation
Immunotherapy
(conversion of the major birch pollen allergen, Bet v 1, into two nonanaphylactic T cell **epitope**-contg. fragments and specific immunotherapy)
IT T cell (lymphocyte)
(**epitope**; conversion of the major birch pollen allergen, Bet v 1, into two nonanaphylactic T cell **epitope**-contg. fragments and specific immunotherapy)
IT IgE
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(**epitopes**; conversion of the major birch pollen allergen, Bet v 1, into two nonanaphylactic T cell **epitope**-contg. fragments and specific immunotherapy)

L5 ANSWER 6 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 1997:568660 CAPLUS
DN 127:247038
TI Crossreactivity and T-cell **epitope** specificity of Bet v 1-specific T cells suggest the involvement of multiple isoallergens in sensitization to birch pollen
AU Sparholt, S. H.; Larsen, J. N.; Ipsen, H.; Schou, C.; Van Neerven, R. J. J.
CS ALK ABELLO, Horsholm, DK-2970, Den.
SO Clin. Exp. Allergy (1997), 27(8), 932-941
CODEN: CLEAEN; ISSN: 0954-7894
PB Blackwell
DT Journal
LA English
CC 15-9 (Immunochemistry)

AB Allergen-specific T lymphocytes play an important role in the pathophysiol. of atopic disease. Detailed studies of their **epitope**-specificity and crossreactivity are required for the development of novel approaches for specific immunotherapy. The aim of the study was to characterize the fine specificity of Bet v 1-specific T cells from allergic donors. Polyclonal T-cell lines (TCL) and T-cell clones (TCC), specific for Bet v 1, the major birch (Betula verrucosa) pollen allergen, were isolated from the peripheral blood of three birch-allergic patients. Their **epitope**-specificity was studied using overlapping synthetic peptides, and crossreactivity with other tree pollen allergens of the Fagales order was evaluated. In addn., the Bet v 1-specific TCC were studied for their phenotype and cytokine prodn. All isolated Bet v 1-specific TCC (19/21 CD4+, 2/21 CD8+) reacted with affinity purified Bet v 1, but showed different reactivities with recombinant Bet v 1 (rBet v 1), and with group 1 allergens from other Fagales species. **Epitope** mapping of rBet v 1-reactive TCC with synthetic peptides of Bet v 1 showed the presence of four T-cell **epitopes**. Polyclonal T-cell lines reacted with 13 different peptides, and displayed even broader crossreactivity with group 1 pollen allergens from other Fagales members. This study demonstrates that apart from T-cell **epitopes** of rBet v 1, many other crossreactive or Bet v 1 isoallergen-specific **epitopes** exist. This indicates that isoallergenic variation plays an important role in the induction of Bet v 1-specific and crossreactive T-cell responsiveness to allergens.

ST T cell **epitope** specificity Betula allergen; **birch allergen** T cell crossreactivity

IT Allergens
RL: BAC (Biological activity or effector, except adverse); PRP (Properties); BIOL (Biological study)
(Bet v I (Betula verrucosa, I); crossreactivity and **epitope** specificity of human T-cells to birch pollen allergen)

IT Alder (Alnus glutinosa)
Birch (Betula pendula)
CD4-positive T cell
CD8-positive T cell
Carpinus betulus
Epitopes
Fagales
Hazel (Corylus avellana)
Oak (Quercus alba)
(crossreactivity and **epitope** specificity of human T-cells to birch pollen allergen)

IT Peptides, biological studies
RL: BAC (Biological activity or effector, except adverse); PRP (Properties); BIOL (Biological study)
(crossreactivity and **epitope** specificity of human T-cells to birch pollen allergen)

IT 195702-59-1 195702-63-7 195702-66-0 195702-68-2 195702-71-7
195702-74-0 195702-76-2 195702-78-4 195702-80-8 195702-82-0
195702-85-3 195702-87-5 195702-89-7
RL: BAC (Biological activity or effector, except adverse); PRP (Properties); BIOL (Biological study)
(crossreactivity and **epitope** specificity of human T-cells to birch pollen allergen)

L5 ANSWER 7 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 1997:228346 CAPLUS
DN 126:249944

TI Modulation of the allergic immune response in BALB/c mice by subcutaneous injection of high doses of the dominant T cell **epitope** from the major birch pollen allergen Bet v 1

AU Bauer, L.; Bohle, B.; Jahn-Schmid, B.; Wiedermann, U.; Daser, A.; Renz, H.; Kraft, D.; Ebner, C.

CS Institute of General and Experimental Pathology, AKH, University of Vienna, Vienna, A-1090, Austria

SO Clin. Exp. Immunol. (1997), 107(3), 536-541
CODEN: CEXIAL; ISSN: 0009-9104

PB Blackwell

DT Journal

LA English

CC 15-2 (Immunochemistry)

AB Several in vitro and in vivo studies indicate that application of high doses of dominant T cell **epitopes** can induce a state of antigen-specific non-responsiveness (anergy). Here, the authors developed a murine model of an allergic immune response to Bet v 1, the major birch pollen allergen. Mice were sensitized by injection of rBet v 1 and the allergic state was proven by the presence of allergen-specific IgE and pos. immediate-type skin tests to Bet v 1. In **epitope** mapping expts., an immunodominant T cell **epitope** of Bet v 1 in BALB/c mice was identified by the use of overlapping peptides. This peptide (BV 139) was subsequently employed for treatment. Two tolerization protocols were used: in one approach, the peptide was administered to naive mice before immunization (group BV 139-S), in the second, already sensitized mice were treated (S-BV 139). The results demonstrated that administering high doses of the dominant T cell **epitope** of Bet v 1 profoundly diminished T cell proliferation to the peptide in the BV 139-S group, and to the peptide as well as to the whole protein in the S-BV 139 group. Skin test reactivity to Bet v 1 was reduced in the BV 139-S group. However, no differences in terms of specific antibody prodn. between treated and untreated mice could be obsd. Thus, administration of dominant T cell **epitopes** can down-regulate the allergen-specific T cell response. Proceeding on the assumption that the T lymphocyte response to allergens is crucial for the induction and maintenance of the allergic disease, a modulation of the immune response to allergens by treatment with T cell **epitope** peptides could represent a promising concept for immunotherapy in the future.

ST allergy T cell **epitope birch allergen**;
pollen allergen Betv1 T cell **epitope**

IT Allergens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(Bet v I (Betula verrucosa, I); allergic immune response modulation by s.c. injection of high doses of dominant T cell **epitope** from major birch pollen allergen Bet v 1 in relation to immunotherapy)

IT Birch
Epitopes
Immune tolerance
Immunotherapy
Pollen
T cell (lymphocyte)
(allergic immune response modulation by s.c. injection of high doses of dominant T cell **epitope** from major birch pollen allergen Bet v 1 in relation to immunotherapy)

IT Hypersensitivity

(immediate hypersensitivity; allergic immune response modulation by s.c. injection of high doses of dominant T cell **epitope** from major birch pollen allergen Bet v 1 in relation to immunotherapy)

IT 188724-41-6
RL: BAC (Biological activity or effector, except adverse); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(allergic immune response modulation by s.c. injection of high doses of dominant T cell **epitope** from major birch pollen allergen Bet v 1 in relation to immunotherapy)

L5 ANSWER 8 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 1998:12536 CAPLUS
DN 128:87790
TI **Epitope** analysis of birch pollen allergen in Japanese subjects
AU Abe, Yusuke; Kimura, Shoji; Kokubo, Taku; Mizumoto, Keiko; Uehara, Motoharu; Katagiri, Makoto
CS Department of Pathology, Asahikawa Medical College, Asahikawa, 078, Japan
SO J. Clin. Immunol. (1997), 17(6), 485-493
CODEN: JCIMDO; ISSN: 0271-9142
PB Plenum Publishing Corp.
DT Journal
LA English
CC 15-9 (Immunochemistry)
AB Birch pollen is a very common cause of nasal allergy (pollinosis) not only in Scandinavia, Europe, Canada, and the northern part of the United States but also in Hokkaido, Japan. The authors have previously reported a pos. assocn. between the HLA-DR9 phenotype and the development of birch pollen allergy in Japanese subjects. However, there is little information about T cell **epitopes** of birch pollen which are presented by HLA class II mols. other than HLA-DR9. Therefore, the authors analyzed the difference in T cell **epitope** usage in patients who had HLA-DR9 vs. those who did not. Seven Japanese patients with birch pollinosis were studied. Some groups of peptides representing T cell **epitopes** (Betula verrucosa; Bet VI peptides, p7-33, p23-46, p138-160) appeared to be shared by the majority, while another peptide (Bet VI p72-95) was recognized predominantly by patients who expressed HLA-DR9 and/or HLA-DQ3 mols. Moreover, seven T cell clones and eight T cell lines were generated from two patients who did not have HLA-DR9 or HLA-DQ3. Using some of these T cell clones/lines, the authors investigated the relation between HLA class II mols. and antigenic peptides. One of these T cell clones recognized antigenic peptides in the context of the HLA-DQ1 mol. To the authors' knowledge, this is the first indication that the **epitope** on Bet VI can be presented by the HLA-DQ mol.
ST **epitope birch allergen** HLA DQ
IT Allergens
RL: PRP (Properties)
(Bet v I (Betula verrucosa, I); **epitope** anal. of birch tree allergen in Japanese humans with pollinosis)
IT HLA-DQ antigen
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(HLA-DQ1 antigen; **epitope** anal. of birch tree allergen in Japanese humans with pollinosis)
IT **Epitope** mapping

Epitopes
Hay fever
Pollen
T cell (lymphocyte)
(**epitope** anal. of birch tree allergen in Japanese humans with pollinosis)

IT Peptides, biological studies
RL: BAC (Biological activity or effector, except adverse); PRP (Properties); BIOL (Biological study)
(**epitope** anal. of birch tree allergen in Japanese humans with pollinosis)

IT T cell stimulating structure-activity relationship
(of peptides of birch pollen allergen)

IT 201009-61-2 201009-62-3 201009-63-4 201009-64-5 201009-65-6
201009-66-7 201009-67-8 201009-68-9 201009-69-0 201009-70-3
201009-71-4 201009-72-5 201009-73-6 201009-74-7 201009-75-8
201009-76-9 201009-77-0 201009-78-1 201009-79-2 201009-80-5
201009-81-6 201009-82-7 201009-83-8 201009-84-9 201009-85-0
201009-86-1 201009-87-2 201009-88-3 201009-89-4 201009-90-7
201009-91-8 201009-92-9 201009-93-0
RL: BAC (Biological activity or effector, except adverse); PRP (Properties); BIOL (Biological study)
(**epitope** anal. of birch tree allergen in Japanese humans with pollinosis)

L5 ANSWER 9 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 1997:221926 CAPLUS
DN 126:237360
TI Immunologic characterization of monoclonal antibodies that modulate human IgE binding to the major birch pollen allergen Bet v 1
AU Lebecque, Serge; Dolecek, Christiane; Laffer, Sylvia; Visco, Vincenzo; Denepoux, Stephane; Pin, Jean-Jacques; Guret, Christiane; Boltz-Nitulescu, George; Weyer, Anne; Valenta, Rudolf
CS Laboratory for Immunlological Research, Schering-Plough, Dardilly, 69571, Fr.
SO J. Allergy Clin. Immunol. (1997), 99(3), 374-384
CODEN: JACIBY; ISSN: 0091-6749
PB Mosby-Year Book
DT Journal
LA English
CC 15-9 (Immunochemistry)
AB Bet v 1 and homologous proteins represent major allergens for almost 95% of patients allergic to tree pollen and approx. 70% of those allergic to fruits and vegetables. As yet, no continuous (sequential) IgE **epitopes** have been detd. for Bet v 1, and evidence has accumulated that Bet v 1 IgE **epitopes** belong to the conformational (discontinuous) type. A panel of 85 mouse monoclonal anti-Bet v 1 antibodies was raised as a tool with which to study the interaction of human IgE antibodies with Bet v 1. The **epitopes** of selected monoclonal antibodies (mAbs) were characterized by mapping with synthetic overlapping peptides and by cross-competition expts. Cross-reactivity of Bet v 1-specific mAbs with tree and plant food allergens was investigated by Western blotting. The influence of Bet v 1-specific mAbs on the IgE-Bet v 1 interaction was studied by competition assays with immobilized purified recombinant Bet v 1 and by basophil histamine release expts. Antibodies that increased the IgE binding to Bet v 1 up to fivefold could

be defined, whereas others inhibited IgE binding to Bet v 1 up to 99% and competed with the Bet v 1-induced histamine release from patients' basophils. The activity of the enhancing antibodies is interpreted as a stabilization of Bet v 1 state/IgE **epitopes**, which are either more accessible for certain IgE antibodies or are recognized with higher affinity. Those mAbs that competed with the Bet v 1-IgE interaction, if humanized or produced as recombinant antibody fragments, might be considered as potential tools for local allergy therapy.

ST monoclonal antibody allergen Bet v1 IgE

IT Allergens
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(Bet v I (Betula verrucosa, I); effect of monoclonal antibodies on the binding of human IgE to **birch allergen** Bet v 1)

IT Monoclonal antibodies
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)
(effect of monoclonal antibodies on the binding of human IgE to **birch allergen** Bet v 1)

IT IgE
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(effect of monoclonal antibodies on the binding of human IgE to **birch allergen** Bet v 1)

IT Basophil
(effect of monoclonal antibodies on the binding of human IgE to **birch allergen** Bet v 1 in relation to histamine release from basophils)

IT 51-45-6, Histamine, biological studies
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(effect of monoclonal antibodies on the binding of human IgE to **birch allergen** Bet v 1 in relation to histamine release from basophils)

L5 ANSWER 10 OF 26 CAPLUS COPYRIGHT 2000 ACS

AN 1997:282897 CAPLUS

DN 126:329438

TI Bip 1, a monoclonal antibody with specificity for the major birch pollen allergen Bet v 1, modulates IgE binding to the allergen

AU Laffer, Sylvia; Vangelista, Luca; Steinberger, Peter; Kraft, Dietrich; Pastore, Annalisa; Valenta, Rudolf

CS Institute of General and Experimental Pathology, AKH, University of Vienna, Vienna, A-1090, Austria

SO Int. Arch. Allergy Immunol. (1997), 113(1-3), 260-261
CODEN: IAAIEG; ISSN: 1018-2438

PB Karger

DT Journal

LA English

CC 15-9 (Immunochemistry)

AB Patients allergic to tree pollen, fruit, and vegetables display IgE cross-reactivity to the major birch pollen allergen Bet v 1. In contrast to other major allergens, no continuous IgE **epitopes** have been identified for Bet v 1 as yet, indicating that the **epitopes** are of the conformational type. Previously, the authors produced an antibody, Bip 1, which was obsd. to enhance IgE binding to Bet v 1. Here, the authors expressed the Bip 1 Fab in Escherichia coli and characterized the purified recombinant Fab and its interaction with Bet v 1 by immunol. and spectroscopic methods.

ST Bip 1 antibody **birch allergen** IgE

IT Allergens
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(Bet v I (Betula verrucosa, I); Bip 1 monoclonal antibody modulates human IgE binding to birch pollen group 1 allergen)
IT Birch (Betula pendula)
Molecular association
(Bip 1 monoclonal antibody modulates human IgE binding to birch pollen group 1 allergen)
IT IgE
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(Bip 1 monoclonal antibody modulates human IgE binding to birch pollen group 1 allergen)
IT Monoclonal antibodies
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)
(Bip 1; modulation of human IgE binding to birch pollen group 1 allergen by)

L5 ANSWER 11 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 1996:548557 CAPLUS
DN 125:193456
TI Immunoassay method and reagent involving suspendable carbon-labeled bioaffine particles
IN Loennberg, Maria; Carlsson, Jan
PA Pharmacia Ab, Swed.
SO PCT Int. Appl., 36 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N033-543
ICS G01N033-532
CC 15-1 (Immunochemistry)
Section cross-reference(s): 9, 14
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9622532	A1	19960725	WO 1996-SE42	19960118
	W: AU, CA, JP, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2210794	AA	19960725	CA 1996-2210794	19960118
	AU 9645928	A1	19960807	AU 1996-45928	19960118
	EP 804733	A1	19971105	EP 1996-901591	19960118
	R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, LU, NL, SE, IE				
	JP 11505603	T2	19990521	JP 1996-522207	19960118
PRAI	SE 1995-184	19950120			
	WO 1996-SE42	19960118			

AB An anal. method comprises establishing the presence of an analyte in a sample by forming a complex between the analyte and its bioaffine counterpart and a suspendable bioaffine reactant (R1) which is labeled with carbon particles and incorporated in the complex in an amt. related to the amt. of analyte in the sample. The method is characterized in that a measurable part of the particles are able to settle. An immunoreagent is described that is labeled with particles and chosen from the group IgE, anti-IgE antibody, or allergen, including IgE-reactive **epitopes** thereof, characterized in that the particles are carbon particles.
ST immunoassay carbon particle bioaffinity label; allergen specific IgE detn

carbon particle; immunochromatog carbon particle bioaffinity label; blood allergen IgE detn allergy diagnosis

IT **Birch**
Mite and Tick
(**allergens**; immunoassay method and reagent using suspendable carbon-labeled bioaffine particles)

IT Allergy
Asthma
Blood analysis
Immunoassay
Inflammation
Polymer-supported reagents
(immunoassay method and reagent using suspendable carbon-labeled bioaffine particles)

IT Antibodies
RL: ANT (Analyte); ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(immunoassay method and reagent using suspendable carbon-labeled bioaffine particles)

IT Allergens
Antigens
Caseins, biological studies
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(immunoassay method and reagent using suspendable carbon-labeled bioaffine particles)

IT Carbon black, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(immunoassay method and reagent using suspendable carbon-labeled bioaffine particles)

IT Polyamide fibers, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(immunoassay method and reagent using suspendable carbon-labeled bioaffine particles)

IT Immunoglobulins
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(A, immunoassay method and reagent using suspendable carbon-labeled bioaffine particles)

IT Immunoglobulins
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(D, immunoassay method and reagent using suspendable carbon-labeled bioaffine particles)

IT Immunoglobulins
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(E, immunoassay method and reagent using suspendable carbon-labeled bioaffine particles)

IT Immunoglobulins
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(G, immunoassay method and reagent using suspendable carbon-labeled bioaffine particles)

IT Immunoglobulins
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)

(M, immunoassay method and reagent using suspendable carbon-labeled bioaffine particles)

IT Immunoassay
(immunoadsorption chromatog., immunoassay method and reagent using suspendable carbon-labeled bioaffine particles)

IT 9004-70-0, Nitrocellulose
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(immunoassay method and reagent using suspendable carbon-labeled bioaffine particles)

IT 7440-44-0, Carbon, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(particles; immunoassay method and reagent using suspendable carbon-labeled bioaffine particles)

L5 ANSWER 12 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 1997:474622 CAPLUS
DN 127:160510
TI Diversity of human T cell receptor sequences of T cell clones with specificity for Bet v 1 peptide/MHC II complexes
AU Breiteneder, Heimo; Hajek, Roswitha; Huttinger, Robert; Ebner, Christof; Schenk, Siegfried; Kraft, Dietrich; Scheiner, Otto
CS Institute of General and Experimental Pathology, AKH-EBO-3Q, University of Vienna, Vienna, 1090, Austria
SO Adv. Exp. Med. Biol. (1996), 409(New Horizons in Allergy Immunotherapy), 365-374
CODEN: AEMBAP; ISSN: 0065-2598
PB Plenum
DT Journal
LA English
CC 15-9 (Immunochemistry)
AB T cell clones (TCC) were raised from the peripheral blood of patients suffering from tree pollen allergy. All TCC were restricted by HLA-DR mols. To investigate possible intervention targets in type I allergic diseases, the authors examd. T cell receptor (TCR) .alpha.- and .beta.-chain nucleotide sequences of several allergen-reactive human CD4+ TCC specific for 4 frequently found **epitopes** of Bet v 1, the major birch pollen allergen. In general, TCC specific for the 4 **epitopes** investigated, used diverse TCRAV and TCRBV gene segments. Moreover, the junctional regions encoding the third complementarity detg. regions (CDR3) of the TCR showed striking heterogeneities in length and amino acid compn. A more restricted use of two J gene segments (TCRBJ1S4 and 2S7) was only obsd. in the .beta.-chain of TCR used by TCC specific for **epitope** 1. In addn., all TCC specific for **epitope** 4 showed an arginine residue in the N-terminal region of their TCRBV CDR3 loops despite their sequence diversities. In view of the striking heterogeneities found, therapeutic strategies aimed at the clonal deletion of allergen-specific T cell clones, providing help for IgE synthesis, may not be feasible. Moreover, these results cast a doubt on the theory, that the CDR3 exclusively provides the primary contact with the peptide bound in the major histocompatibility (MHC) groove, and suggest addnl. interaction with MHC class II.
ST TCR usage T cell **birch allergen**
IT Allergens
RL: BSU (Biological study, unclassified); BIOL (Biological study)

(Bet v I (Betula verrucosa, I); TCR receptor usage by HLA-DR-restricted human T cells specific for birch pollen allergen **epitopes**)

IT CD4-positive T cell
DNA sequences
Epitopes
Pollen
Protein sequences
(TCR receptor usage by HLA-DR-restricted human T cells specific for birch pollen allergen **epitopes**)

IT HLA-DR antigen
TCR .alpha..beta. (receptor)
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(TCR receptor usage by HLA-DR-restricted human T cells specific for birch pollen allergen **epitopes**)

IT 150302-77-5 150302-78-6 167382-53-8 187540-70-1
RL: PRP (Properties)
(TCR receptor usage by HLA-DR-restricted human T cells specific for birch pollen allergen **epitopes**)

L5 ANSWER 13 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 1996:355269 CAPLUS
DN 125:31847
TI Evidence for an alpha helical T cell **epitope** in the C-terminus of the main birch pollen allergen Bet v 1
AU Kungl, Andreas J.; Susani, Markus; Lindemann, Almut; Machius, Mischa; Visser, Antonie J. W. G.; Scheiner, Otto; Kraft, Dietrich; Breitenbach, Michael; Auer, Manfred
CS Department Immunodermatology, Sandoz Research Institute, Vienna, A-1235, Austria
SO Biochem. Biophys. Res. Commun. (1996), 223(1), 187-192
CODEN: BBRCA9; ISSN: 0006-291X
DT Journal
LA English
CC 15-9 (Immunochemistry)
Section cross-reference(s): 11
AB Secondary structure prediction of the main birch pollen allergen Bet v 1 was in good agreement with the secondary structural elements found by analyzing the Bet v 1 CD data. According to both expt. and prediction, 32% of 160 amino acids participate in alpha helixes, 21% in beta sheets, 24% in turns, and 23% in other structural motifs. The peptide LRAVESYLLAHS which represents one of the major T cell **epitopes** on Bet v 1 was shown to have a high propensity to form an alpha helix. Time-resolved fluorescence anisotropy measurements of the allergen revealed an overall rotational correlation time of 7.35 ns, which corresponds to a hydrodynamic mol. radius of 19.2 .ANG.. This refers to a monomeric Bet v 1 mol. in soln., which is also reflected in the narrow band width of the 1H-NMR spectrum. The results presented here are in good agreement with the recently solved NMR structure of Amb t 5; both allergens are monomers in soln. with an extended C-terminal alpha helix contg. a major T cell **epitope**.
ST **birch allergen** Betv1 **epitope** alpha helix; T lymphocyte **birch allergen** Betv1 **epitope**
IT Conformation and Conformers
Pollen

Protein sequences
(alpha helical human T cell **epitope** in C-terminus of main birch pollen allergen Bet v 1)

IT Allergens
RL: BOC (Biological occurrence); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(Bet v I (Betula verrucosa, I), alpha helical human T cell **epitope** in C-terminus of main birch pollen allergen Bet v 1)

IT Lymphocyte
(T-cell, alpha helical human T cell **epitope** in C-terminus of main birch pollen allergen Bet v 1)

IT Conformation and Conformers
(.alpha.-helical, alpha helical human T cell **epitope** in C-terminus of main birch pollen allergen Bet v 1)

IT 151901-17-6
RL: BOC (Biological occurrence); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(T-cell **epitope**; alpha helical human T cell **epitope** in C-terminus of main birch pollen allergen Bet v 1)

L5 ANSWER 14 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 1996:546462 CAPLUS
DN 125:219490
TI High-level expression in Escherichia coli and purification of recombinant plant profilins: comparison of IgE-binding capacity and allergenic activity
AU Vrtala, Susanne; Wiedemann, Petra; Mittermann, Irene; Eichler, Hans-Georg;
Sperr, Wolfgang R.; Valent, Peter; Kraft, Dietrich; Valenta, Rudolf
CS Inst. Generla Experimental Pathology, Univ. Vienna, Austria
SO Biochem. Biophys. Res. Commun. (1996), 226(1), 42-50
CODEN: BBRCA9; ISSN: 0006-291X
DT Journal
LA English
CC 15-9 (Immunochemistry)
AB Because of their structural similarity and ubiquitous distribution as actin binding proteins, plant profilins represent important cross-reactive
allergens for almost 20% of patients suffering from Type I allergy to pollen and other plant products. The cDNAs coding for three birch profilin variants (Tyr44, Glu47, and Asn47), timothy grass profilin, and three tobacco profilin isoforms (ntprof1-3) were expressed at high levels in Escherichia coli as a non-fusion proteins. The recombinant plant profilins were purified to homogeneity by poly (L-proline) affinity chromatog. and showed comparable capacity to bind IgE-antibodies from profilin allergic patients. All recombinant plant profilins elicited dose-dependent histamine release from basophils of a profilin allergic patient and induced immediate type skin reactions. It is concluded that profilins from different plant species share IgE-**epitopes** and allergenic properties. Plant profilins therefore constitute a family of functional pan-allergens which may substitute each other for diagnosis and
specific immunotherapy.
ST profilin allergen IgE binding
IT Allergens
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(Bet v 2 (Betula verrucosa, 2); **birch allergen** binding by IgE from allergic humans)

IT Basophil
(IgE-binding capacity and allergenic activity of recombinant profilins from birch, timothy grass, and tobacco pollen in relation to histamine release by basophils)
IT Allergy
(birch, timothy grass, and tobacco profilin binding by IgE from allergic humans)
IT Birch
Escherichia coli
Timothy
Tobacco
(high-level expression in Escherichia coli and comparison of IgE-binding capacity and allergenic activity of recombinant profilins from birch, timothy grass, and tobacco pollen)
IT Profilins
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BIOL (Biological study); PROC (Process)
(high-level expression in Escherichia coli and comparison of IgE-binding capacity and allergenic activity of recombinant profilins from birch, timothy grass, and tobacco pollen)
IT Immunoglobulins
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(E, high-level expression in Escherichia coli and comparison of IgE-binding capacity and allergenic activity of recombinant profilins from birch, timothy grass, and tobacco pollen)
IT 51-45-6, Histamine, biological studies
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(IgE-binding capacity and allergenic activity of recombinant profilins from birch, timothy grass, and tobacco pollen in relation to histamine release by basophils)

L5 ANSWER 15 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 1995:645495 CAPLUS
DN 123:141599
TI Multiplicity of cross-reactive **epitopes** on Bet v I as detected with monoclonal antibodies and human IgE
AU Akkerdaas, J. H.; van Ree, R.; Aalbers, M.; Stapel, S. O.; Aalberse, R. C.
CS Central Laboratory, Netherlands Red Cross Blood Transfusion Service, Amsterdam, 1066 CX, Neth.
SO Allergy (Copenhagen) (1995), 50(3), 215-20
CODEN: LLRGDY; ISSN: 0105-4538
DT Journal
LA English
CC 15-9 (Immunochemistry)
Section cross-reference(s): 17
AB Six monoclonal antibodies against Bet v I, the major cross-reactive allergen of birch pollen (Betula verrucosa), were obtained. Four did not react with fruits, but 2 monoclonal antibodies (mAbs) (5H8 and 9C11) were reactive with apple and other fruits. These 2 cross-reactive antibodies reacted with identical or overlapping sites, but differed in their relative degree of cross-reactivity toward various fruits and hazelnut. Cross-reactive human IgE antibodies reacted with a non-overlapping **epitope**, as indicated by results of a 2-site RIA with the fruit-reactive mAb 9C11. By isoelec. focusing (IEF) in conjunction with immunoblotting, a max. of 7 isoforms could be distinguished. Depletion of

birch-pollen ext. for Bet v I with the most reactive mAb (7F7) removed approx. 95% of the IgE cross-reactivity between birch pollen and apple ext. The remaining 5% cross-reactive material still could inhibit the binding of IgE to apple allergen completely, and was reactive with mAbs 5H8 and 3C4. By IEF/immunoblot, it was shown that these mAbs recognize an isoform of Bet v I that is poorly, if at all, recognized by mAb 7F7. These results illustrate the heterogeneity of Bet v I, both with respect to the cross-reactive sites as well as to the backbone structure. This type of heterogeneity has possible implications for the use of monoclonal antibodies in allergen standardization.

ST crossreactive **epitope birch allergen** antibody IgE

IT Alder
Apple
Birch
Cherry
Hazel
Peach
Pear
(multiplicity of cross-reactive **epitopes** on **birch allergen** as detected with monoclonal antibodies and human IgE)

IT Allergens
RL: PRP (Properties)
(Bet v I (Betula verrucosa, I), multiplicity of cross-reactive **epitopes** on **birch allergen** as detected with monoclonal antibodies and human IgE)

IT Immunoglobulins
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(E, multiplicity of cross-reactive **epitopes** on **birch allergen** as detected with monoclonal antibodies and human IgE)

IT Antibodies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(monoclonal, multiplicity of cross-reactive **epitopes** on **birch allergen** as detected with monoclonal antibodies and human IgE)

L5 ANSWER 16 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 1995:724208 CAPLUS
DN 123:167018
TI Diversity of TCRAV and TCRBV sequences used by human T-cell clones specific for a minimal **epitope** of Bet v 1, the major birch pollen allergen
AU Breiteneder, Heimo; Scheiner, Otto; Hajek, Roswitha; Hulla, Wolfgang; Huettinger, Robert; Fischer, Gottfried; Kraft, Dietrich; Ebner, Christof
CS Institute of General and Experimental Pathology, University of Vienna, Vienna, A-1090, Austria
SO Immunogenetics (1995), 42(1), 53-8
CODEN: IMNGBK; ISSN: 0093-7711
DT Journal
LA English
CC 15-2 (Immunochemistry)
Section cross-reference(s): 3
AB T-cell clones (TCC) were raised from the peripheral blood of patients suffering from tree pollen allergy. All TCC were restricted by HLA-DR mols. To investigate possible intervention targets in Type I allergic

diseases, the authors examd. T-cell receptor (TCR) .alpha. and .beta. chain nucleotide sequences of five allergen-reactive human CD4+ TCC specific for a C-terminal **epitope** (BV 144) of Bet v 1, the major birch pollen allergen. Proliferation assays using synthetic peptides revealed the 10-mer LRAVESYLLA as minimal **epitope** for three TCC; two TCC also displayed reactivity with the nonapeptide LRAVESYLL. Two TCC
expressed TCRBV2S3, all other BV144-specific TCC used diverse TCRAV and TCRBV gene segments. Moreover, the junctional regions encoding the third complementary detg. regions (CDR3) of the TCR showed a striking heterogeneity in length and amino acid compn. Nevertheless, all TCC showed an arginine residue in the N-terminal region of their TCRBV CDR3 loops. Therefore, therapeutic strategies aimed at the clonal deletion of allergen-specific T-cell clones, providing help for IgE synthesis, will not be feasible. The results cast a doubt on the theory that the CDR3 exclusively provides the primary contact with the peptide bound in the major histocompatibility (MHC) groove, and suggest addnl. interaction with
MHC class II.

ST TCR alphabeta V region **birch allergen**; Betv1 allergen
TCR alphabeta V region; gene TCRAV TCRBV diversity Betv1 allergen

IT Gene, animal
RL: PRP (Properties)
(TCRAV11S1J6C; diversity of T-cell receptor TCRAV and TCRBV sequences used by human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)

IT Gene, animal
RL: PRP (Properties)
(TCRAV2S3J17S7C; diversity of T-cell receptor TCRAV and TCRBV sequences used by human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)

IT Gene, animal
RL: PRP (Properties)
(TCRAV5S1J21C; diversity of T-cell receptor TCRAV and TCRBV sequences used by human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)

IT Gene, animal
RL: PRP (Properties)
(TCRAV8S1J9S5C; diversity of T-cell receptor TCRAV and TCRBV sequences used by human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)

IT Gene, animal
RL: PRP (Properties)
(TCRAV8S2J9S15C; diversity of T-cell receptor TCRAV and TCRBV sequences used by human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)

IT Gene, animal
RL: PRP (Properties)
(TCRAV9S1J9S3C; diversity of T-cell receptor TCRAV and TCRBV sequences used by human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)

IT Gene, animal
RL: PRP (Properties)
(TCRBV15S1D1J2S5C2; diversity of T-cell receptor TCRAV and TCRBV sequences used by human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)

IT Gene, animal
RL: PRP (Properties)
(TCRBV17S1D1J2S3C2; diversity of T-cell receptor TCRAV and TCRBV sequences used by human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)
IT Gene, animal
RL: PRP (Properties)
(TCRBV24S1D1J2S2C2; diversity of T-cell receptor TCRAV and TCRBV sequences used by human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)
IT Gene, animal
RL: PRP (Properties)
(TCRBV2S3D1J1S5C1; diversity of T-cell receptor TCRAV and TCRBV sequences used by human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)
IT Gene, animal
RL: PRP (Properties)
(TCRBV2S3D2J2S1C2; diversity of T-cell receptor TCRAV and TCRBV sequences used by human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)
IT Birch
(B. pendula, diversity of T-cell receptor TCRAV and TCRBV sequences used by human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)
IT Allergens
RL: ADV (Adverse effect, including toxicity); BPR (Biological process); BIOL (Biological study); PROC (Process)
(Bet v I (Betula verrucosa, I), diversity of T-cell receptor TCRAV and TCRBV sequences used by human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)
IT Immunoglobulins
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(E, diversity of T-cell receptor TCRAV and TCRBV sequences used by human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)
IT Histocompatibility antigens
RL: ADV (Adverse effect, including toxicity); BPR (Biological process); BIOL (Biological study); PROC (Process)
(HLA-DR, diversity of T-cell receptor TCRAV and TCRBV sequences used by
human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)
IT Lymphocyte
(T-cell, diversity of T-cell receptor TCRAV and TCRBV sequences used by
human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)
IT Antigen receptors
Receptors
RL: PRP (Properties)
(TCR (T-cell antigen receptor), diversity of T-cell receptor TCRAV and TCRBV sequences used by human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)
IT Antigen receptors
Receptors
RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence);
BPR (Biological process); PRP (Properties); BIOL (Biological study); OCCU

(Occurrence); PROC (Process)
(TCR .alpha..beta. (T-cell antigen receptor .alpha..beta.), diversity of T-cell receptor TCRAV and TCRBV sequences used by human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)

IT Deoxyribonucleic acid sequences
(complementary, diversity of T-cell receptor TCRAV and TCRBV sequences used by human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)

IT 167382-53-8 167382-54-9
RL: ADV (Adverse effect, including toxicity); BPR (Biological process); BIOL (Biological study); PROC (Process)
(as **epitope** for T-cell; diversity of T-cell receptor TCRAV and TCRBV sequences used by human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)

IT 164272-40-6, Genbank Z47366 164272-41-7, Genbank Z47367 164272-42-8, Genbank Z47368 164272-43-9, Genbank Z47369 164272-44-0, Genbank Z47371
164272-45-1, Genbank Z47370 164272-46-2, Genbank Z47372 164272-47-3, Genbank Z47373 164272-48-4, Genbank Z47374 164272-49-5, Genbank Z47375
164272-50-8, Genbank Z47376
RL: PRP (Properties)
(nucleotide sequence; diversity of T-cell receptor TCRAV and TCRBV sequences used by human T-cell clones specific for minimal **epitope** of Bet v 1, major birch pollen allergen)

L5 ANSWER 17 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 1994:506526 CAPLUS
DN 121:106526
TI Peptides of the main allergens contained in the pollen of trees of the Fagales order for use in diagnosing or treating allergies
IN Ebner, Christof; Ferreira, Fatima; Schenk, Siegfried; Szepfalusi, Zsolt; Valenta, Rudolf; Breitenbach, Michael; Kraft, Dietrich; Rumpold, Helmut; Scheiner, Otto
PA Biomay Produktions- und Handelsgesellschaft m.b.H., Austria
SO PCT Int. Appl., 11 pp.
CODEN: PIXXD2
DT Patent
LA German
IC ICM C07K007-08
ICS A61K039-36; G01N033-68
CC 15-9 (Immunochemistry)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9410194	A2	19940511	WO 1993-AT163	19931025
	WO 9410194	A3	19940901		
	W: AU, CA, FI, JP, NO, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9454115	A1	19940524	AU 1994-54115	19931025
PRAI	AT 1992-2125		19921027		
	AT 1993-43		19930114		
	WO 1993-AT163		19931025		

AB The invention concerns the T-cell **epitope** of a 17 kD protein present as the main allergen contained in the pollen of trees of the Fagales order, in particular birches, hazels and alders, or generated by genetic engineering as a recombinant protein. Because of the high degree

of affinity between said trees, their resp. 17 kD proteins are also highly homologous. These proteins are designed as Bet v I, Cor a I and Aln g I in the international literature and cause tree pollen allergies in predisposed persons (allergic patients). The peptides derived from the main allergens (major allergens), in particular Bet v I, are suitable for diagnosing tree pollen allergy and are capable of stimulating (causing the proliferation, the cytokine prodn.) or blocking T-cells of the patients in vitro and in vivo in an allergen-specific manner, or to provoke tolerance to the allergen specific T-cells. Peptides of Bet v I which stimulate T cells from patients allergic to birch trees were identified. The crossreactivity of T cells from patients allergic to hazels and alders with these peptides was significant.

ST **birch allergen** Bet v I peptide; allergy diagnosis treatment **birch allergen** peptide

IT Allergens
RL: BIOL (Biological study)
(Aln g I, peptides of, for diagnosis and treatment of allergies)

IT Allergy
(diagnosis of, peptides of primary allergen of Fagales trees for)

IT Allergy inhibitors
(peptides of primary allergen of Fagales trees as)

IT Alder
(primary allergen Aln g I of, peptides of, for diagnosis and treatment of allergies)

IT Birch
(primary allergen Bet v I of, peptides of, for diagnosis and treatment of allergies)

IT Hazel
(primary allergen Cor a I of, peptides of, for diagnosis and treatment of allergies)

IT Fagales
(primary allergen of, peptides of, for diagnosis and treatment of allergies)

IT Allergens
RL: BIOL (Biological study)
(Bet v I (Betula verrucosa, I), peptides of, for diagnosis and treatment of allergies)

IT Allergens
RL: BIOL (Biological study)
(Cor a I (Corylus avellana, I), peptides of, for diagnosis and treatment of allergies)

IT 150302-72-0, Allergen Bet v I(1-16) (birch) 150302-73-1, Allergen Bet v I(35-48) (birch) 150302-74-2, Allergen Bet v I(75-90) (birch) 150302-79-7, Allergen Bet v I (111-126) (birch) 150321-14-5, Allergen Bet v I(29-44) (birch) 152647-59-1, Allergen Bet v I (141-159) (birch) 156880-97-6, Allergen Bet v I(9-26) (birch) 156880-98-7, Allergen Bet v I(61-76) (birch) 156880-99-8, Allergen Bet v I(84-97) (birch) 156881-00-4, Allergen Bet v I (93-110) (birch)
RL: BIOL (Biological study)
(T-cell **epitope** of Bet v I allergen, for allergy diagnosis and treatment)

L5 ANSWER 18 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 1993:595664 CAPLUS
DN 119:195664

TI Histamine derivatives and methods for their use as immunomodulators
IN Melmon, Kenneth L.; Greenstein, Julia L.; Khosropour, Parisa
PA Immulogic Pharmaceutical Corp., USA; Leland Stanford Junior University
SO PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K031-415
ICS A61K039-35; A61K039-39
CC 1-7 (Pharmacology)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9314754	A1	19930805	WO 1993-US659	19930125
	W: AU, CA, FI, JP, KP, KR, NO, NZ				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CN 1079908	A	19931229	CN 1993-102513	19930122
	AU 9335915	A1	19930901	AU 1993-35915	19930125
	EP 626847	A1	19941207	EP 1993-904613	19930125
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	JP 07503470	T2	19950413	JP 1993-513377	19930125
PRAI	US 1992-826180	19920127			
	WO 1993-US659	19930125			

AB Methods are provided for using histamine derivs. His-NH(CH2)nCONHC6H4CF3 (n = 2-10) as immunomodulators and in immunotherapeutics. More specifically, methods are provided for inhibiting at least a portion of an antigen-specific antibody response and/or a portion of a T-cell proliferative response by the immune system of a mammal, comprising administering to the mammal an effective amt. of a compn. comprising .gtoreq.1 histamine deriv. having binding specificity for .gtoreq.1 histamine receptor. Also disclosed are methods for treating sensitivity to a particular antigen and methods of treated T-cell-mediated disease in a person by administering a therapeutically effective amt. of a compn. comprising .gtoreq.1 histamine deriv. having binding specificity for .gtoreq.1 histamine receptor, optionally administering the antigen or an immunogenic portion thereof, and further optionally administering a peptide comprising .gtoreq.1 T-cell **epitope** of the antigen. Examples showed that histamine congeners are potent immunosuppressants, and that each has a different potential mechanism of immunomodulation. His-NHCH(CH3)(CH2)4CONHC6H4CF3 suppresses T-cell-dependent IgE and IgG1 (but not IgM, IgG2a, or IgG2b) antibody responses. His-NH(CH2)5CONHC6H4CF3 (I) suppresses IgG1, IgG2a, and IgG2b (but not IgM) responses. Only I appears to directly suppress T-cell proliferation to specific antigen at the doses tested. Effects of the derivs. in an autoimmune disease model are presented.

ST immunosuppressant histamine deriv

IT Antigens
RL: BIOL (Biological study)
(T-cell antigen-specific proliferative response inhibition by histamine deriv. and)

IT Alder
Alternaria
Artemisia
Birch
Blattella

Canidae
Cryptomeria
Dermatophagoides
Felis
Honeybee
Lolium
Oak
Olea
Parietaria
Periplaneta
Plantago
Ragweed
(**allergen** protein of, sensitivity to, treatment of, histamine derivs. for)

IT Poisoning
(endotoxin-induced, treatment of, immunosuppressant histamine derivs. for)

IT Allergy inhibitors
Immunosuppressants
(histamine derivs.)

IT Antidiabetics and Hypoglycemics
(immunosuppressant histamine derivs.)

IT Peptides, biological studies
RL: BIOL (Biological study)
(of allergen T-cell **epitope**, histamine deriv. and, for inhibition of allergen-specific antibody response)

IT Transplant and Transplantation
(rejection of, treatment of, immunosuppressant histamine derivs. for)

IT Lymphocyte
(T-cell, antigen-specific proliferative response of, inhibition of, histamine derivs. for)

IT Neoplasm inhibitors
(T-cell leukemia, immunosuppressant histamine derivs.)

IT Antigens
RL: BIOL (Biological study)
(auto-, sensitivity to, treatment of, histamine derivs. for)

IT Allergy inhibitors
(desensitizers, histamine derivs.)

IT Toxins
RL: BIOL (Biological study)
(endo-, poisoning induced by, treatment of, immunosuppressant histamine derivs. for)

IT Receptors
RL: BIOL (Biological study)
(histaminic, histamine derivs. binding to, for immunosuppressants)

IT Therapeutics
(immuno-, histamine derivs., for T-cell mediated diseases)

IT Skin, neoplasm
(mycosis fungoides, treatment of, immunosuppressant histamine derivs. for)

IT 150436-86-5 150643-50-8 150643-51-9 150643-52-0 150643-59-7
150643-60-0 150643-61-1 150643-62-2 150643-63-3
RL: BIOL (Biological study)
(as immunosuppressant)

IT 51-45-6D, Histamine, derivs.
RL: BIOL (Biological study)
(as immunosuppressants)

IT 150436-88-7
RL: BIOL (Biological study)
(histamine receptor binding by and immunosuppressant activity of)
IT 150436-87-6
RL: BIOL (Biological study)
(histamine receptor binding by, immunosuppressant histamine derivs. in relation to)

L5 ANSWER 19 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 1993:493527 CAPLUS
DN 119:93527
TI Recombitope peptides containing T cell **epitopes** and stimulating T cell activity, for allergy therapy and diagnosis
IN Rogers, Bruce L.; Morgenstern, Jay P.; Bond, Julian F.; Garman, Richard D.; Kuo, Mei Chang; Morville, Malcolm
PA Immulogic Pharmaceutical Corp., USA
SO PCT Int. Appl., 73 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12N015-12
ICS A61K039-35; C12N015-62; G01N033-53; C07K007-10; C07K015-08; A61K039-36
CC 15-9 (Immunochemistry)
FAN.CNT 7

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9308280	A1	19930429	WO 1992-US8694	19921016
	W: AU, CA, FI, HU, JP, KR, NO				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, SE				
	US 5547669	A	19960820	US 1991-807529	19911213
	ZA 9208000	A	19930426	ZA 1992-8000	19921016
	AU 9227940	A1	19930521	AU 1992-27940	19921016
	AU 682658	B2	19971016		
	ZA 9208001	A	19930622	ZA 1992-8001	19921016
	EP 610335	A1	19940817	EP 1992-922494	19921016
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, SE				
	JP 07503362	T2	19950413	JP 1992-507748	19921016
	WO 9424281	A1	19941027	WO 1993-US3471	19930414
	W: AU, CA, FI, JP, KR, NO, NZ, UA				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9341026	A1	19941108	AU 1993-41026	19930414
	AU 680820	B2	19970814		
	EP 694067	A1	19960131	EP 1993-910592	19930414
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	JP 09501043	T2	19970204	JP 1993-523074	19930414
	NO 9401370	A	19940608	NO 1994-1370	19940415
	FI 9401758	A	19940616	FI 1994-1758	19940415
	FI 9504895	A	19951013	FI 1995-4895	19951013
	NO 9504095	A	19951213	NO 1995-4095	19951013
	FI 9603331	A	19960827	FI 1996-3331	19960827

PRAI	US 1991-777859	19911016
	US 1991-807529	19911213
	US 1989-431565	19891103
	US 1991-662276	19910228
	WO 1992-US8694	19921016
	WO 1993-US3471	19930414

FI 1995-4895 19951013

AB Recombitope peptides, stimulating T cell activity and comprising .gtoreq.2 T cell **epitopes** derived from the same or from different protein antigens, are provided. The peptides can be derived from protein allergens, autoantigens, or other protein antigens. Methods of diagnosing sensitivity to an allergen or other protein antigen, methods to treat such sensitivity, methods for designing recombitope peptides where the protein antigen has unknown or ill-defined T cell **epitopes**, and therapeutic compns. are also disclosed. T cell epitopic studies were done with peptides and protein chains of the human T cell-reactive feline protein (TRFP) and immunoreactive regions were identified. Synthetic oligonucleotides were designed with Escherichia coli-preferred codons for PCR amplification and expression in E. coli of recombitope peptides from TRFP. The peptide sequences included a 6 His residue leader sequence (for allowing purifn. of the expressed recombitope peptide using QIAGEN NTA-agarose) and a thrombin cleavage site before the actual recombitope sequence. Recombitope peptide arrangements were identified which had little to no binding to IgE and which gave responses to T cells of patients allergic to TRFP.

ST recombitope peptide T lymphocyte stimulation **epitope**; allergen recombitope peptide T cell stimulation; autoantigen recombitope peptide T cell stimulation; antigen recombitope peptide T cell stimulation; allergy diagnosis treatment recombitope peptide; cat allergy recombitope peptide; T cell reactive feline protein recombitope

IT Allergens
RL: BIOL (Biological study)
(T cell **epitopes** of, in recombitope peptides stimulating T cells)

IT Allergy inhibitors
(T cell **epitopes**-contg. T cell-stimulating recombitope peptides as)

IT Allergy
(T cell **epitopes**-contg. T cell-stimulating recombitope peptides for detection and modification of)

IT Antigens
RL: BIOL (Biological study)
(T cell **epitopes**-contg. T cell-stimulating recombitope peptides from, designing of)

IT Proteins, specific or class
RL: BIOL (Biological study)
(TRFP (human T cell-reactive feline protein), T cell **epitopes** of, T cell-stimulating recombitope peptides contg.)

IT Alder
Alternaria
Artemisia
Birch
Blattella
Canidae
Cryptomeria
Dermatophagoides
Dermatophagoides farinae
Dermatophagoides pteronyssinus
Felidae

Honeybee
Lolium
Oak
Olea
Parietaria
Periplaneta
Plantago
Ragweed
(**allergen** of, T cell **epitopes** of, in recombitope peptides stimulating T cells)

IT Blood analysis
(detection of T cells and Igs to protein antigen in, recombitope peptides contg. T cell **epitopes** and T cell-stimulating activity for)

IT Immunoglobulins
RL: BIOL (Biological study)
(detection of T cells and, to protein antigen, recombitope peptides contg. T cell **epitopes** and T cell-stimulating activity for)

IT Nucleic acids
RL: BIOL (Biological study)
(for T cell **epitopes**-contg. T cell-stimulating recombitope peptides)

IT Protein sequences
(of T cell-stimulating recombitope peptides of human T cell-reactive feline protein of cat)

IT Proteins, biological studies
RL: BIOL (Biological study)
(of basement membrane, as autoantigens, T cell **epitopes** -contg. T cell-stimulating recombitope peptides from)

IT Receptors
RL: BIOL (Biological study)
(of thyroid cells, as autoantigen, T cell **epitopes**-contg. T cell-stimulating recombitope peptides from)

IT Basement membrane
(proteins of, as autoantigen, T cell **epitopes**-contg. T cell-stimulating recombitope peptides from)

IT Thyroid gland, composition
(proteins or receptors of, as autoantigens, T cell **epitopes** -contg. T cell-stimulating recombitope peptides from)

IT Peptides, biological studies
RL: BIOL (Biological study)
(recombitopes, T cell **epitopes** on and T cell stimulating)

IT Felis catus
(sensitivity to, treatment of, T cell **epitopes**-contg. T cell-stimulating recombitope peptides for)

IT Multiple sclerosis
(treatment of, with T cell **epitopes**-contg. T cell-stimulating recombitope peptides from myelin basic protein of human)

IT Allergens
RL: BIOL (Biological study)
(Lol p I (Lolium perenne, I), recombitope peptide contg. region of, for T cell stimulation)

IT Allergens
RL: BIOL (Biological study)
(Lol p IX (Lolium perenne, IX), recombitope peptide contg. region of, for T cell stimulation)

IT Allergens

RL: BIOL (Biological study)
(Amb a I.4 (Ambrosia artemisifolia, I.4), recombitope peptide contg. region of, for T cell stimulation)

IT Allergens
RL: BIOL (Biological study)
(Amb a II (Ambrosia artemisifolia, II), recombitope peptide contg. region of, for T cell stimulation)

IT Immunoglobulins
RL: BIOL (Biological study)
(E, T cell-stimulating recombitope peptides contg. T cell **epitopes** not stimulating)

IT Phospholipoproteins
RL: BIOL (Biological study)
(MBP (myelin basic protein), as autoantigen, T cell **epitopes** -contg. T cell-stimulating recombitope peptides from)

IT Blood-group substances
RL: BIOL (Biological study)
(Rh, as autoantigen, T cell **epitopes**-contg. T cell-stimulating recombitope peptides from)

IT Lymphocyte
(T-cell, recombitope peptides with **epitopes** for and stimulating)

IT Antigens
RL: BIOL (Biological study)
(auto-, T cell **epitopes**-contg. T cell-stimulating recombitope peptides from)

IT Receptors
RL: BIOL (Biological study)
(cholinergic, as autoantigen, T cell **epitopes**-contg. T cell-stimulating recombitope peptides from)

IT Deoxyribonucleic acid sequences
(complementary, for human T cell-reactive feline protein of cat, recombitope peptides prepn. in relation to)

IT Allergy
(delayed hypersensitivity, detection of, T cell **epitopes** -contg. T cell-stimulating recombitope peptides for)

IT Allergy
(immediate hypersensitivity, detection of, T cell **epitopes** -contg. T cell-stimulating recombitope peptides for)

IT Allergens
RL: BIOL (Biological study)
(Der f I (Dermatophagoides farinae, I), recombitope peptide contg. region of, for T cell stimulation)

IT Allergens
RL: BIOL (Biological study)
(Der f II (Dermatophagoides farinae, II), recombitope peptide contg. region of, for T cell stimulation)

IT Allergens
RL: BIOL (Biological study)
(Der p I (Dermatophagoides pteronyssinus, I), recombitope peptide contg. region of, for T cell stimulation)

IT Allergens
RL: BIOL (Biological study)
(Der p II (Dermatophagoides pteronyssinus, II), recombitope peptide contg. region of, for T cell stimulation)

IT Allergens
RL: BIOL (Biological study)
(Amb a I (Ambrosia artemisifolia, I), recombitope peptide contg. region

of, for T cell stimulation)
IT Allergens
RL: BIOL (Biological study)
(Amb a I.1 (Ambrosia artemisifolia, I.1), recombitope peptide contg. region of, for T cell stimulation)
IT Allergens
RL: BIOL (Biological study)
(Amb a I.2 (Ambrosia artemisifolia, I.2), recombitope peptide contg. region of, for T cell stimulation)
IT Allergens
RL: BIOL (Biological study)
(Amb a I.3 (Ambrosia artemisifolia, I.3), recombitope peptide contg. region of, for T cell stimulation)
IT Allergens
RL: BIOL (Biological study)
(Cry j I (Cryptomeria japonica, I), recombitope peptide contg. region of, for T cell stimulation)
IT Allergens
RL: BIOL (Biological study)
(Cry j II, recombitope peptide contg. region of, for T cell stimulation)
IT 136796-96-8, Leader A-human T cell-reactive feline protein chain 1 (cat)
136796-97-9, Leader B-human T cell-reactive feline protein chain 1 (cat)
144996-55-4, Human T cell-reactive feline protein chain 2 (cat)
RL: BIOL (Biological study)
(amino acid sequence of and T cell **epitopes**-contg. T cell-stimulating recombitope peptides recombinant prepn. in relation to)
IT 9004-10-8, Insulin, biological studies 9024-58-2 81876-95-1, Carboxypeptidase H
RL: BIOL (Biological study)
(as autoantigen, T cell **epitopes**-contg. T cell-stimulating recombitope peptides from)
IT 149013-73-0
RL: BIOL (Biological study)
(as leader sequence in purifn. and prepn. of recombitope peptide from human T cell-reactive feline protein)
IT 149119-96-0 149119-97-1 149120-00-3
RL: BIOL (Biological study)
(nucleotide sequence of and T cell **epitopes**-contg. T cell-stimulating recombitope peptides recombinant prepn. in relation to)
IT 136380-69-3, Human T cell-reactive feline protein chain 1 (29-55) (cat synthetic) 136380-84-2, Human T cell-reactive feline protein chain 2 (14-39) (cat synthetic) 136380-92-2, Human T cell-reactive feline protein chain 1 Fel-29 fragments (cat synthetic) 149013-72-9 149230-58-0, Human T cell-reactive feline protein chain 1 (7-33) (cat synthetic) 149230-59-1, Human T cell-reactive feline protein chain 1 fragments (cat synthetic)
RL: BIOL (Biological study)
(recombitope peptide contg., cat allergy detection and treatment with)
IT 9002-04-4, Thrombin
RL: BIOL (Biological study)
(synthetic leader sequence cleavage with, in prepn. of recombitope peptide from human T cell-reactive feline protein)

L5 ANSWER 20 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 1994:29263 CAPLUS

DN 120:29263
TI T cell clones specific for Bet v I, the major birch pollen allergen, crossreact with the major allergens of hazel, Cor a I, and alder, Aln g I
AU Ebner, Christof; Ferreira, Fatima; Hoffmann, Karin; Hirschwehr, Reinhold; Schenk, Siegfried; Szepfalusi, Zsolt; Breiteneder, Heimo; Parronchi, Paola; Romagnani, Sergio; et al.
CS Inst. Gen. Exp. Pathol., Univ. Vienna, Austria
SO Mol. Immunol. (1993), 30(15), 1323-9
CODEN: MOIMD5; ISSN: 0161-5890
DT Journal
LA English
CC 15-9 (Immunochemistry)
AB Tree pollens are responsible for type I allergies during the flowering season in spring. Pollens from birch, hazel and alder constitute the most important allergen sources in this respect in the northern hemisphere. Human IgE antibodies, specific for the major allergens of these pollens, are known to crossreact, and in general every tree pollen allergic patient is sensitized to these three pollen allergens. In this study the authors investigated 8 T-helper cell clones (CD3+, CD4+, TCR.alpha./.beta.) with specificity for Bet v I, the major birch pollen allergen, as proved by reactivity with purified natural as well as with recombinant allergen. The T cell clones were used to investigate common T cell **epitopes** of the Bet v I mol. with Cor a I, the major allergen of hazel pollen and Aln g I, the major allergen of alder pollen. All 8 T cell clones reacted with all three proteins with different intensity. Moreover, three T cell clones, which were known to react with immunodominant T cell **epitopes** on the Bet v I mol., were tested for reactivity with dodecapeptides synthesized according to the corresponding homologous regions of the Cor a I and Aln g I sequence. All the peptides induced strong T cell proliferation, indicating the existence of multiple cross-reacting **epitopes**. These findings will have an impact on the prodn. of vaccines for immunotherapy of tree pollen allergies.
ST Betula allergen T cell crossreactivity; **birch allergen** T cell crossreactivity hazel; alder T cell crossreactivity **birch allergen**; tree pollen allergen T cell crossreactivity
IT Allergens
RL: BIOL (Biological study)
(Aln g I (Alnus glutinosa, I), T-cells to **birch allergen** crossreactivity with, in humans with type I allergy)
IT Pollen
(allergen I of, of birch, human allergic T-cells to, alder and hazel major allergen crossreactivity with)
IT Birch
(major allergen I of, human allergic T-cells to, alder and hazel major allergen crossreactivity by)
IT Alder
Hazel
(major allergen of, human allergic T-cells to birch major allergen crossreactivity with)
IT Allergens
RL: BIOL (Biological study)
(Bet v I (Betula verrucosa, I), T-cells of humans with type I allergy to, alder and hazel major allergen crossreactivity with)
IT Allergens
RL: BIOL (Biological study)
(Cor a I (Corylus avellana, I), T-cells to **birch**

allergen crossreactivity with, in humans with type I allergy)

IT Lymphocyte
(T-cell, to major allergen I of birch, of humans with type I allergy, alder and hazel major allergen crossreactivity by)

IT Allergy
(immediate hypersensitivity, T-cells to birch major allergen I in humans with, alder and hazel major allergen crossreactivity with)

IT 151901-22-3 151901-23-4 151901-24-5
RL: BIOL (Biological study)
(of major allergen I of alder, human T-cells to birch major allergen crossreactivity with)

IT 146819-50-3 151901-17-6 151901-18-7
RL: BIOL (Biological study)
(of major allergen I of birch, human allergic T-cells to, alder and hazel major allergen crossreactivity with)

IT 151901-19-8 151901-20-1 151901-21-2
RL: BIOL (Biological study)
(of major allergen I of hazel, human T-cells to birch major allergen crossreactivity with)

L5 ANSWER 21 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 1993:167322 CAPLUS
DN 118:167322
TI Identification of multiple T cell **epitopes** on Bet v I, the major birch pollen allergen, using specific T cell clones and overlapping peptides
AU Ebner, C.; Szepfalusi, Z.; Ferreira, F.; Jilek, A.; Valenta, R.; Parronchi, P.; Maggi, E.; Romagnani, S.; Scheiner, O.; Kraft, D.
CS Inst. Gen. Exp. Pathol., Univ. Vienna, Vienna, A-1090, Austria
SO J. Immunol. (1993), 150(3), 1047-54
CODEN: JOIMA3; ISSN: 0022-1767
DT Journal
LA English
CC 15-9 (Immunochemistry)
AB Eleven T cell clones (TCC) with specificity for Bet v I were established from the peripheral blood of six birch pollen allergic donors. Bet v I is the major allergen of birch (Betula verrucosa) pollen and shows high homol. to the major allergens of pollens of other trees within the order Fagales (hazel, alder, hornbeam, oak, etc.), which represent important inhalant allergens in the northern hemisphere. The TCC were shown to react with purified natural, as well as with purified recombinant Bet v I. All clones showed the helper cell phenotype (CD3+CD4+) and expressed the TCR-.alpha./.beta.. The cytokine prodn. pattern in response to stimulation with allergen resulted in enhanced prodn. of interleukin (IL)-4 in 9 of 11 clones. The clones were used for T cell **epitope** mapping on the Bet v I mol. For this purpose, peptides with a length of 12 amino acids each and overlapping for 10 residues were synthesized following the amino acid sequence of Bet v I. These 75 peptides were used to stimulate Bet v I-specific T cell clones. The expts. revealed 7 distinct T cell **epitopes** on the Bet v I mol. The **epitopes** were scattered over the whole mol., 2 sequences were in agreement with an algorithm previously described for the prediction of T cell **epitopes**. In 3 cases, one could identify distinct TCC specificities within single individuals. Furthermore, for each donor, none of the peptides representing **epitopes** for TCC inhibited the

binding of IgE antibodies to Bet v I. These results suggest that T cells and IgE antibodies from the same individual recognize different structures on the Bet v I allergen.

ST T cell **epitope birch allergen**; Betula allergen T cell **epitope**

IT Pollen
(of birch, Bet v I allergen of, T cell **epitopes** of)

IT Immunoglobulins
RL: BIOL (Biological study)
(E, binding **epitopes** for human, of Bet v I allergen)

IT Lymphocyte
(T-cell, helper cell, allergen Bet v I multiple **epitopes** for)

IT Lymphokines and Cytokines
RL: FORM (Formation, nonpreparative)
(interleukin 4, formation of, by T cells, Bet v I allergen induction of)

IT Allergens
RL: BIOL (Biological study)
(Bet v I (Betula verrucosa, I), multiple **epitopes** of, for T cell, IgE binding **epitopes** different from)

IT 146819-47-8 146819-48-9 146819-49-0 146819-50-3 146819-51-4 146819-52-5 146819-53-6 146819-54-7
RL: BIOL (Biological study)
(of Bet v I allergen, as T cell **epitope**)

L5 ANSWER 22 OF 26 CAPLUS COPYRIGHT 2000 ACS

AN 1994:52558 CAPLUS

DN 120:52558

TI Studies on the biological activities of the amino terminal **epitope** 23-38 from the major birch pollen allergen Bet v I

AU Vik, H.; Steinsvaag, S. K.; Dybendal, T.; Florvaag, E.; Holen, E.; Elsayed, S.

CS Lab. Clin. Biochem., Univ. Bergen, Norway

SO Mol. Biol. Immunol. Allergens (1993), 223-5. Editor(s): Kraft, Dietrich; Sehon, Alec H. Publisher: CRC, Boca Raton, Fla.
CODEN: 59QMA6

DT Conference

LA English

CC 15-9 (Immunochemistry)

AB Peptide Bet v I 23-38 was demonstrated to bind IgE in vitro by RAST inhibition, in vivo by pos. skin prick tests in birch allergic individuals, mast cell degranulation in nasal mucosa, and by binding birch-specific IgE in Prausnitz Kustner inhibition tests. Bet v I 23-38 could be an IgE-binding haptenic **epitope**.

ST birch pollen allergen

IT **Birch**
(**allergen** of pollen of, biol. activities of N-terminal fragment of)

IT Pollen
(allergen of, of birch, biol. activities of N-terminal fragment of)

IT Allergens
RL: BIOL (Biological study)
(Bet v I (Betula verrucosa, I), biol. activities of N-terminal fragment of)

L5 ANSWER 23 OF 26 CAPLUS COPYRIGHT 2000 ACS

AN 1992:505712 CAPLUS
DN 117:105712
TI Tree pollen allergens, cDNA encoding them, and their use in treatment and diagnosis of allergies
IN Breiteneder, Heimo; Reikerstorfer, Arnold; Valenta, Rudolf; Hoffmann-Sommergruber, Karin; Breitenbach, Michael; Kraft, Dietrich; Rumpold, Helmut; Scheiner, Otto; Ebner, Christof; Ferreira, Fatima
PA Biomay Biotechnik Produktions- und Handelsgesellschaft m.b.H., Austria
SO PCT Int. Appl., 56 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12N015-29
ICS C07K013-00; C12N015-70; G01N033-53; C12Q001-02; A61K037-02
CC 3-2 (Biochemical Genetics)
Section cross-reference(s): 9, 15
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9202621	A2	19920220	WO 1991-EP1479	19910806
	WO 9202621	A3	19920514		
	W: AU, CA, FI, JP, NO, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
	AT 9001668	A	19951115	AT 1990-1668	19900808
	AT 401179	B	19960725		
	CA 2067144	AA	19920209	CA 1991-2067144	19910806
	AU 9183112	A1	19920302	AU 1991-83112	19910806
	AU 657917	B2	19950330		
	EP 495052	A1	19920722	EP 1991-914150	19910806
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	JP 05501656	T2	19930402	JP 1991-513157	19910806
	FI 9201524	A	19920407	FI 1992-1524	19920407
	NO 9201362	A	19920605	NO 1992-1362	19920407
	US 5693495	A	19971202	US 1992-847010	19920601
	AU 9513436	A1	19950629	AU 1995-13436	19950222
PRAI	AT 1990-1668	19900808			
	US 1991-683831	19910411			
	WO 1991-EP1479	19910806			

AB CDNAs encoding alder pollen allergen Aln g I, hazel pollen allergen Cor a I, and birch pollen allergen Bet v I are cloned and expressed in Escherichia coli. The allergens were recognized by IgE antibodies from sera of patients allergic to these pollens.
ST tree pollen allergen cDNA cloning; Aln g I allergen cDNA cloning; Cor a I allergen cDNA cloning; Bet v I allergen cDNA cloning; allergy treatment diagnosis pollen cDNA
IT Gene, plant
RL: BIOL (Biological study)
(cDNA, for pollen allergens Aln g I and Cor a I and Bet v I of alder and hazel and birch, cloning and expression in Escherichia coli of)
IT Molecular cloning
(of cDNAs for pollen allergens Aln g I and Cor a I and Bet v I of alder
and hazel and birch, in Escherichia coli)
IT Deoxyribonucleic acid sequences
(of Aln g I and Cor a I and Bet v I pollen allergen cDNAs of alder and hazel and birch)
IT Protein sequences
(of Aln g I and Cor a I and Bet v I pollen allergen of alder and hazel

and birch)
IT Birch
(pollen allergen Bet v I of, cDNA for, cloning and expression in Escherichia coli of)
IT Alder
(pollen allergen Aln g I of, cDNA for, cloning and expression in Escherichia coli of)
IT Hazel
(pollen allergen Cor a I of, cDNA for, cloning and expression in Escherichia coli of)
IT Fagales
(pollen allergens of, cDNAs for, cloning and expression in Escherichia coli of)
IT Allergy
(treatment and diagnosis of, pollen allergens of hazel and birch and alder for)
IT Allergens
RL: BIOL (Biological study)
(Aln g I, cDNA for, of Aldus, cloning and expression in Escherichia coli of)
IT Allergens
RL: BIOL (Biological study)
(Cor a I, cDNA for, of Corylus, cloning and expression in Escherichia coli of)
IT Immunoglobulins
RL: ANT (Analyte); ANST (Analytical study)
(E, detection of, in allergy patients, pollen allergens of hazel and birch and alder for)
IT Allergens
RL: BIOL (Biological study)
(Bet v I (Betula verrucosa, I), cDNA for, of Betula, cloning and expression in Escherichia coli of)
IT 126161-14-6, Allergen Bet v I (Betula pendula clone pBV1 isoform protein moiety) 143066-16-4, Allergen Aln g I (alder) 143066-17-5, Allergen Cor a I (hazel isoform 1) 143066-18-6, Allergen Cor a I (hazel isoform 2) 143066-19-7, Allergen Cor a I (hazel isoform 3) 143066-20-0, Allergen Cor a I (hazel isoform 4)
RL: BAC (Biological activity or effector, except adverse); PRP (Properties); BIOL (Biological study)
(amino acid sequence of, complete, and expression in Escherichia coli of cDNA for)
IT 141101-72-6 141101-73-7 141101-74-8 141101-75-9 141101-76-0 141101-77-1
RL: BIOL (Biological study)
(**epitope** of Fagales pollen allergen)
IT 143068-37-5, Deoxyribonucleic acid (alder allergen Aln g I messenger RNA-complementary plus 3'-flanking region fragment) 143068-41-1, Deoxyribonucleic acid (**birch allergen** Bet v I messenger RNA-complementary plus 3'-flanking region fragment) 143068-64-8, Deoxyribonucleic acid (hazel allergen Cor a I isoform 3 messenger RNA-complementary minus terminator fragment) 143068-66-0, Deoxyribonucleic acid (hazel allergen Cor a I isoform 1 messenger RNA-complementary plus 3'-flanking region fragment) 143068-67-1, Deoxyribonucleic acid (hazel allergen Cor a I isoform 2 messenger RNA-complementary plus 3'-flanking region fragment) 143068-69-3, Deoxyribonucleic acid (hazel allergen Cor a I isoform 4 messenger RNA-complementary plus 3'-flanking region fragment)
RL: BIOL (Biological study)

(nucleotide sequence of and cloning in Escherichia coli of)
IT 143068-36-4, Deoxyribonucleic acid (alder allergen Aln g I messenger RNA-complementary minus terminator fragment) 143068-40-0, Deoxyribonucleic acid (**birch allergen** Bet v I messenger RNA-complementary minus terminator fragment) 143068-62-6, Deoxyribonucleic acid (hazel allergen Cor a I isoform 1 messenger RNA-complementary minus terminator fragment) 143068-63-7, Deoxyribonucleic acid (hazel allergen Cor a I isoform 2 messenger RNA-complementary minus terminator fragment) 143068-65-9, Deoxyribonucleic acid (hazel allergen Cor a I isoform 4 messenger RNA-complementary minus terminator fragment) 143068-68-2, Deoxyribonucleic acid (hazel allergen Cor a I isoform 3 messenger RNA-complementary plus 3'-flanking region fragment)
RL: PRP (Properties); BIOL (Biological study)
(nucleotide sequence of, complete, and expression in Escherichia coli of)

L5 ANSWER 24 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 1993:167338 CAPLUS
DN 118:167338
TI Homology of two cDNAs coding for birch pollen allergens with calmodulin: Protein-bound calcium affects the IgE-binding capacity
AU Seiberler, Susanne; Scheiner, Otto; Kraft, Dietrich; Valenta, Rudolf
CS Inst. Gen. Exp. Pathol., Univ. Vienna, Vienna, A-1090, Austria
SO Int. Arch. Allergy Immunol. (1992), 99(2-4), 380-1
CODEN: IAAIEG; ISSN: 1018-2438
DT Journal
LA English
CC 15-9 (Immunochemistry)
Section cross-reference(s): 3
AB Birch pollen is known to contain 2 well-defined allergens, Bet v I, a protein, which is a major allergen for 95% of the birch-pollen-allergic individuals, and birch profilin, identified as a novel type of plant pan allergen. Here, is reported the identification of 2 novel birch pollen allergens with a sequence homol. to calmodulin. Although both allergens are rare targets for patients' IgE (5-10%), they are of particular interest because both proteins require the native protein conformation and
protein-bound Ca2+ for IgE binding. Thus, for the first time an IgE **epitope** is described which is assembled by a polypeptide and a divalent cation, Ca2+.
ST birch pollen allergen **epitope** calcium complex; IgE binding birch pollen allergen calcium
IT Pollen
(allergen from birch, IgE **epitope** on, calcium-dependent, calmodulins in relation to)
IT **Birch**
(**allergen** from pollen of, IgE **epitope** on, calcium-dependent, calmodulins in relation to)
IT Calmodulins
RL: BIOL (Biological study)
(birch pollen allergens homologous to)
IT Allergens
RL: BIOL (Biological study)
(of birch pollen, IgE **epitope** on, calcium-dependent, calmodulins in relation to)
IT Protein sequences
(of calcium-dependent allergen, of birch pollen)

IT Immunoglobulins
RL: BIOL (Biological study)
(E, birch pollen allergen binding by, calcium-dependent **epitope** in)
IT 7440-70-2, Calcium, biological studies
RL: BIOL (Biological study)
(IgE **epitope** on birch pollen allergen dependence on)

L5 ANSWER 25 OF 26 CAPLUS COPYRIGHT 2000 ACS
AN 1991:183460 CAPLUS
DN 114:183460
TI Mapping of Bet v I **epitopes** by using murine monoclonal antibodies
AU Marc-Series, I.; Boutin, Y.; Vrancken, E. R.; Hebert, J.
CS Unite Rech. Inflammation Immunol. Rhumatol., CHUL, Ste-Foy, PQ, G1V 4G2, Can.
SO Int. Arch. Allergy Appl. Immunol. (1990), 92(3), 226-32
CODEN: IAAAAM; ISSN: 0020-5915
DT Journal
LA English
CC 15-2 (Immunochemistry)
AB The different determinants of birch pollen exts., as shown by SDS-PAGE anal., range from 10 to 94 kDa. These determinants were then electrotransferred on nitrocellulose strips and allowed to react with human IgE Ab from sensitive patients in order to identify the allergenic determinants. Several minor (43, 35, 28 and 21 kDa) and the major (17 kDa) allergenic determinants were identified. Murine monoclonal antibodies (mAb) were then produced against the major allergenic determinant (Bet v I) and their specificity confirmed by immunoblot. One of them, mAb 3F10, was used to affinity-purify the Bet v I. The purity of this material was confirmed by SDS-PAGE anal. and its reactivity on immunoblot against human IgE ensured its biol. activity. These mAb were then sepd. into four families based on their pattern of reactivity with Bet v I. Indeed, four different **epitopes** on the mol. were identified. Binding inhibition studies using two of them (mAb 5F9 and 8F12) suggested that the **epitopes** of Bet v I recognized by these mAb are not overlapping. Howevaer, the binding of 8H7 and 3F10 was partially inhibited by 5F9 and the binding of 3F10, by 8F12. These data suggest that those two latter **epitopes** are somewhat overlapping. The mAb 5F9 could inhibit the binding of human IgE on the affinity-purified Bet v I up to 40% and then shares a common idiotope with human specific IgE Ab of allergic patients.
ST Bet V I allergen **epitope**; birch pollen allergen **epitope**
IT Allergens
RL: BIOL (Biological study)
(Bet v I, **epitopes** of birch pollen, mapping of, monoclonal antibodies for)
IT Pollen
(allergen Bet v I of birch, **epitopes** of, mapping of, monoclonal antibodies for)
IT **Birch**
(**allergen** Bet v I of pollen of, **epitopes** of, mapping of, monoclonal antibodies for)

L5 ANSWER 26 OF 26 MEDLINE DUPLICATE 1
AN 91076141 MEDLINE

DN 91076141
TI Cross-reactivity among the pollen proteins of birch and apple trees.
AU Berrens L; van Dijk A G; Houben G F; Hagemans M L; Koers W J
CS CBF Research Group, Madrid.
SO ALLERGIE UND IMMUNOLOGIE, (1990) 36 (3) 147-56.
Journal code: 3A4. ISSN: 0323-4398.
CY GERMANY: Germany, Federal Republic of
DT (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
(RANDOMIZED CONTROLLED TRIAL)
LA English
FS Priority Journals
EM 199103
AB In the spring of 1986, the pollen were collected from apple trees in full blossom, and were investigated for their allergenicity. The patients selected for study were subjects with a combined inhalant allergy to birch pollen and an oral allergy to apple fruit. The apple pollen extract yielded about the same percentage of nondialysable substance as obtained from birch pollen. In contrast to the latter, UV-spectroscopy revealed no flavonoids adsorbed to the apple pollen proteins. Patients with a combined allergy to birch pollen and apple fruit showed positive skin reactions to both birch and apple pollen extract. Inhibition of IgE-binding in RAST to birch pollen was observed by apple pollen extract at a 1000-fold lower potency than the homologous **birch allergens**. Immunoblotting demonstrated IgG-antibodies in birch-allergic sera cross-reactive with apple pollen components. It is concluded that minor allergenic determinants cross-reactive with birch pollen **epitopes** occur not only in the fruit, but also in the pollen of the apple tree.
CT Check Tags: Human
Cross Reactions
Fruit: IM, immunology
*Hay Fever: IM, immunology
Isoelectric Point
*Pollen: IM, immunology
Pollen: UL, ultrastructure
Radioallergosorbent Test
Skin Tests
Spectrophotometry, Ultraviolet
*Trees

=> s ipsen h

L6 0 IPSEN H

=> s spangfort md

L7 0 SPANGFORT MD

=> s larsen j

L8 7 LARSEN J

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L9 ANSWER 1 OF 6 SCISEARCH COPYRIGHT 2000 ISI (R)
AN 2000:832780 SCISEARCH
GA The Genuine Article (R) Number: 369JV
TI Ab initio calculations for elucidation of the lanosterol 14 alpha-demethylation mechanism
AU CabreraVivas B M (Reprint); Melendez F J; MartinezAguilera L M R; KubliGarfias C
CS PRIV 37 OTE 1602, COL EL MIRADOR, PUEBLA 72530, MEXICO (Reprint); BENEMERITA UNIV AUTONOMA PUEBLA, FAC CIENCIAS QUIM, PUEBLA, MEXICO; UNIV NACL AUTONOMA MEXICO, INST INVEST BIOMED, LAB QUIM HORMONAL, MEXICO CITY 04510, DF, MEXICO; INST MEXICANO PETR, MEXICO CITY 07730, DF, MEXICO
CYA MEXICO
SO JOURNAL OF MOLECULAR STRUCTURE-THEOCHEM, (17 NOV 2000) Vol. 532, pp. 245-256.
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.
ISSN: 0166-1280.
DT Article; Journal
FS PHYS
LA English
REC Reference Count: 39
AB Ab initio calculations at the RHF/6-31G* level were performed with the SPARTAN program in order to elucidate the best pathway through which norlanosterol could be biosynthesized from lanosterol (demethylation). Two possible main pathways have been reported: the pathway via intermediate carboxylic acid proposed by Olson and Akhtar [J.A. Olson, M. Lindberg, K. Bloch, J. Biol. Chem. 226 (1957) 941-956; M. Akhtar, I.A. Watkinson, A.D. Rahimtula, D.C. Wilton, K.A. Munday, Biochem. J. 111 (1969) 757-761], and the pathway via intermediate formyloxy proposed by Alexander et al. [K. Alexander, M. Akhtar, R.B. Boar, J.F. McGhie, D.H.R. Barton, J. Chem. Sec. Chem. Commun. (1972) 383-386; R.T. Fischer, J.M. Trzaskos, R.L. Magolda, S.S. Koo, C.S, Brosz, B. **Larsen, J.** Biol. Chem. 266 (10) (1991) 6124-6132]. We conclude that the formyloxy pathway is more feasible than the carboxylic acid pathway based on an analysis of frontier orbitals, hardness/softness and reactivity parameters. (C) 2000 Elsevier Science B.V. All rights reserved.
CC CHEMISTRY, PHYSICAL
ST Author Keywords: 14 alpha-demethylation; HOMO; LUMO; hardness and softness; exergonic and endergonic reactions
STP KeyWords Plus (R): 14-ALPHA-METHYL DEMETHYLASE; CHOLESTEROL-BIOSYNTHESIS; OXIDATIVE DEMETHYLATION; C-32 DEMETHYLATION; YEAST MICROSOMES; CYTOCHROME-P-450; INTERMEDIATE; ACCUMULATION
RE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)
AKHTAR M	1969	111	757	BIOCHEM J
AKHTAR M	1969	9	473	EUR J BIOCHEM
AKHTAR M	1968		1406	J CHEM SOC CHEM COMM
ALEXANDER K	1972		383	J CHEM SOC CHEM COMM

AOYAMA Y	1978	82	33	BIOCHEM BIOPH RES CO
AOYAMA Y	1978	85	28	BIOCHEM BIOPH RES CO
AOYAMA Y	1986	134	659	BIOCHEM BIOPH RES CO
AOYAMA Y	1962	259	16	J BIOL CHEM
AOYAMA Y	1989	264	2	J BIOL CHEM
CANONICA L	1968	90	3597	J AM CHEM SOC
CLAYTON R B	1956	218	319	J BIOL CHEM
DAWSON J H	1988	240	433	SCIENCE
EDWARDS J O	1962	84	16	J AM CHEM SOC
FIECCHI A	1972	180	147	P R LOND B
FIESER L F	1959	364	364	STEROIDS
FISCHER R T	1991	266	6124	J BIOL CHEM
FISCHER R T	1989	30	1621	J LIPID RES
FUKUI K	1982	218	747	SCIENCE
GAYLOR J L	1963	238	1649	J BIOL CHEM
GIBBONS G F	1979	183	309	BIOCHEM J
GOODMAN D S	1963	238	1287	J BIOL CHEM
GUENGERICH F P	1984	17	9	ACCOUNTS CHEM RES
JOHNSTON J D	1957	79	1145	J AM CHEM SOC
KLYNE W	1970		9	QUIMICA ESTEROIDES
KUBLIGARFIAS C	1996	388	35	J MOL STRUCT THEOCHE
LEHNINGER A L	1995		254	PRINCIPIOS BIOQUIMIC
LIU H I	1995	270	10544	J BIOL CHEM
OLSON J A	1957	226	941	J BIOL CHEM
PEARSON R G	1967	89	1827	J AM CHEM SOC
PEARSON R G	1966	151	172	SCIENCE
SCHROEPFER G J	1982	51	555	ANN REV BIOCH
SCHROEPFER G J	1961	236	1668	J BIOL CHEM
SCHROEPFER G J	1972	180	125	P ROY SOC LOND B BIO
SHAFIEE A	1986	27	1	J LIPID RES
TRZASKOS J M	1984	259	13402	J BIOL CHEM
TRZASKOS J M	1986	261	16937	J BIOL CHEM
WATKINSON I A	1971	121	131	BIOCHEM J
WHITE A	1968		80	PRINCIPLES BIOCH
WHITE R E	1980	49	315	ANN REV BIOCH

L9 ANSWER 2 OF 6 SCISEARCH COPYRIGHT 2000 ISI (R)
AN 1998:624080 SCISEARCH
GA The Genuine Article (R) Number: 109DW
TI Internal generation of waves for time-dependent mild-slope equations
AU Lee C (Reprint); Suh K D
CS KOREA OCEAN RES & DEV INST, COASTAL & HARBOUR ENGN DIV, ANSAN POB 29, SEOUL 425600, SOUTH KOREA (Reprint); SEOUL NATL UNIV, DEPT CIVIL ENGN, SEOUL 151742, SOUTH KOREA
CYA SOUTH KOREA
SO COASTAL ENGINEERING, (JUL 1998) Vol. 34, No. 1-2, pp. 35-57.
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.
ISSN: 0378-3839.
DT Article; Journal
FS ENGI
LA English
REC Reference Count: 21
AB A technique for internal generation of waves is studied for two time-dependent mild-slope equation models developed by Copeland [Copeland, G.J.M., 1985. A practical alternative to the mild-slope wave equation. Coastal Eng., 9, pp. 125-149] and Radder and Dingemans [Radder, A.C.,

Dingemans, M.W., 1985. Canonical equations for almost periodic, weakly nonlinear gravity waves. Wave Motion, 7, pp. 473-485]. For the Radder and Dingemans' equations, desired energy of incident waves could not be obtained from the viewpoint of mass transport which has successfully been used for the Boussinesq equations and the Copeland equations by Larsen and
Dancy [**Larsen, J.**, Dancy, H., 1983. Open boundaries in short wave simulations-a new approach. Coastal Eng., 7, pp. 285-297] and Madsen and Larsen [Madsen, P.A., **Larsen, J.**, 1987. An efficient finite-difference approach to the mild-slope equation. Coastal Eng., 11, pp. 329-351], respectively. However, for both of the Copeland's and Radder and Dingemans' models, desired energy of incident waves could be obtained from the viewpoint of energy transport. Using the viewpoint of
energy transport in the Radder and Dingemans equations, which treat random
waves of narrow frequency band properly, we could successfully generate not only monochromatic waves but also directional random waves.

CC ENGINEERING, CIVIL; ENGINEERING, MARINE

ST Author Keywords: time-dependent mild-slope equations; numerical wave generation; energy transport

STP KeyWords Plus (R): LINEAR DISPERSION CHARACTERISTICS; BOUSSINESQ EQUATIONS; FORM

RE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)
BERKHOFF J C W	1972		471	13TH P INT C COAST E
BOOIJ N	1981			811 DELFT U TECH DEP
COPELAND G J M	1985	9	125	COAST ENG
KIM T	1994		340	P 2J INT C COAST ENG
KIRBY J T	1984	89	745	J GEOPHYS RES OCEANS
KIRBY J T	1992		391	P 23 INT C COAST ENG
KOBUNE K	1986		80	P 5 INT OFFSH MECH A
KUBO Y	1992		419	P 20 INT C COAST ENG
LARSEN J	1983	7	285	COAST ENG
LEE C	1994			THESIS U DELAWARE
LEE C H	1994	6	389	J KOREAN SOC COASTAL
MADSEN P A	1987	11	329	COAST ENG
MADSEN P A	1991	15	371	COAST ENG
MADSEN P A	1992	18	183	COAST ENG
NISHIMURA H	1983		123	P 30 JAP C COAST ENG
NWOGU O	1993	119	618	J WATERW PORT C ASCE
OTNES R K	1978	1		APPLIED TIME SERIES
PEREGRINE D H	1967	27	815	J FLUID MECH
RADDER A C	1985	7	473	WAVE MOTION
SMITH R	1975	72	373	J FLUID MECH
YOON S B	1996	16	53	J KOREAN SOC CIVIL E

L9 ANSWER 3 OF 6 MEDLINE DUPLICATE 1

AN 85018257 MEDLINE

DN 85018257

TI Mechanism of inhibition of herpesvirus growth by 2'-5'-linked trimer of 9-beta-D-xylofuranosyladenine.

AU Goswami B B; Gosselin G; Imbach J L; Sharma O K

NC CA 23536 (NCI)

SO VIROLOGY, (1984 Sep) 137 (2) 400-7.

Journal code: XEA. ISSN: 0042-6822.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals; Cancer Journals
EM 198501
AB The 2'-5'-linked trimer of 9-beta-D-xylofuranosyladenine (XyloA)3 is an extremely potent inhibitor of growth of herpes simplex viruses 1 and 2. Evidence is presented that in spite of its increased stability in cell-free extracts (D.A. Eppstein, Y.V. Marsh, B.B. Schryver, M.A. **Larsen**, **J**.W. Barnett, J.P.H. Verheyden, and E.J. Prisbe, J. Biol. Chem. 257, 13390-13397, 1982), intact (XyloA)3 was not detected in Vero cells, but instead was rapidly degraded in the medium to monomeric 9-beta-D-xylofuranosyladenine (XyloA). The XyloA thus formed was rapidly taken up by cells, phosphorylated to its triphosphate, and produced inhibition of RNA synthesis. The observed inhibition of DNA synthesis (D.A. Eppstein, Y.V. Marsh, B.B. Schryver, M.A. **Larsen**, **J**.W. Barnett, J.P.H. Verheyden, and E.J. Prisbe, J. Biol. Chem. 257, 13390-13397, 1982) and herpesvirus growth by (XyloA)3 (D.A. Eppstein, J.W. Barnett, Y.V. Marsh, G. Gosselin, and J.L. Imbach, Nature (London) 302, 723, 724, 1983) is most likely the result of inhibition of RNA synthesis by its degradation product XyloA.
CT Check Tags: Animal; Comparative Study; Support, Non-U.S. Gov't; Support, U.S. Gov't, Non-P.H.S.; Support, U.S. Gov't, P.H.S.
Acyclovir: PD, pharmacology
*Adenosine: AA, analogs & derivatives
Adenosine: PD, pharmacology
*Antiviral Agents: PD, pharmacology
Cell Line
Cercopithecus aethiops
Kidney
*Simplexvirus: DE, drug effects
Simplexvirus: GD, growth & development
Simplexvirus: GE, genetics
Species Specificity
Transcription, Genetic: DE, drug effects
Vidarabine: PD, pharmacology
RN 4185-03-9 (9-xylosyladenine); 5536-17-4 (Vidarabine); 58-61-7 (Adenosine); 59277-89-3 (Acyclovir)
CN 0 ((2'-5')-9-xylofuranosyladenine trimer); 0 (Antiviral Agents)

L9 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2000 ACS
AN 1974:126869 CAPLUS
DN 80:126869
TI Exact finite-range DWBA [distorted-wave Born analysis] analyses of (12C,11B) and (12C,13C) reaction from lead-208
AU Low, K. S.; Tamura, T.
CS Cent. Nucl. Stud., Univ. Texas, Austin, Tex., USA
SO Phys. Lett. B (1974), 48(4), 285-9
CODEN: PYLBAJ
DT Journal
LA English
CC 75-1 (Nuclear Phenomena)
AB A rapid exact finite-range DWBA calcn. is discussed and applied to the anal. of (12C, 11B) and (12C, 13C) reactions on 208Pb. The calcd. angular

distributions were compared with expt. (**Larsen**, **J**. S., et al., 1972); rather good agreement was obtained. Good relative spectroscopic factors were extd. from 209Bi and 207Pb states the abs. spectroscopic factors were correct to within a factor of 2 at the worst, and much better in general.

ST carbon lead 208 reaction; boron 11 prodn carbon; carbon 13 prodn carbon; bismuth 209 level; lead 207 level

IT Nuclear energy level
(of bismuth-209 and lead-207, from carbon-12 bombardment of lead-208, calcn. of spectroscopic factors for)

IT 13966-28-4, reactions
RL: RCT (Reactant)
(bombardment of, by carbon-12, calcn. of angular distributions of boron-11 and carbon-13 from)

IT 14762-74-4P, preparation 14798-13-1P, preparation
RL: PREP (Preparation)
(from lead-208 by carbon-12 bombardment, angular distributions of, calcn. of)

IT 7440-69-9, properties
RL: PRP (Properties)
(nuclear energy levels of bismuth-209, from carbon-12 bombardment of lead-208, calcn. of spectroscopic factors for)

IT 14119-29-0, properties
RL: PRP (Properties)
(nuclear energy levels of, from carbon-12 bombardment of lead-208, calcn. of spectroscopic factors for)

L9 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2000 ACS

AN 1970:89610 CAPLUS

DN 72:89610

TI Protonation of 9-ethyl-10-methylanthracene. Absence of a large Baker-Nathan effect in alkylarenium-ion-formation

AU Brouwer, D. M.; Van Doorn, J. A.

CS Kon./Shell-Lab., Shell Res. N. V., Amsterdam, Neth.

SO Recl. Trav. Chim. Pays-Bas (1970), 89(1), 88-96
CODEN: RTCPA3

DT Journal

LA English

CC 22 (Physical Organic Chemistry)

GI For diagram(s), see printed CA Issue.

AB Protonation of 9-ethyl-10-methylanthracene in HF or CF3CO2H/H2O.BF3 affords a mixt. of the 9H+- (I) and 10H+-9-ethyl-10-methylanthracenium ions (II). These ions differ in free energy by only 0.9-1.0 kcal/mole. This small difference in stability between I and II, which is probably due to steric rather than electronic effects, shows that methyl and ethyl groups are approx. equally effective in stabilizing arenium ions. This result demonstrates, contrary to what was recently concluded (Arnett, E. M.; **Larsen**, **J**. W.; 1969) on the basis of calorimetric measurements of the heats of protonation of alkylbenzenes in FSO3H-SbF5, that there is no large Baker-Nathan effect in alkylarenium-ion formation. The PMR spectrum of I exhibits some remarkable features (notablyan unusually strong shielding of the ethyl-CH3 protons) that are assocd. with the particular conformation of the (>CHEt) group in this ion and related ones.

ST anthracenes protonation; protonation anthracenes; Baker Nathan effects arenium ions; arenium ions Baker Nathan effects

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IT   Conjugation
        (hyper-, protonation of ethylmethylanthracene in relation to)
IT   Protonation
        (of ethylmethylanthracene, hyperconjugation in relation to)
IT   27746-05-0   27746-06-1
     RL: PRP (Properties)
        (nuclear magnetic resonance of)
IT   19713-49-6
     RL: RCT (Reactant)
        (protonation of, hyperconjugation in relation to)

L9   ANSWER 6 OF 6  MEDLINE
AN   58112777     MEDLINE
DN   58112777
TI   [].
     Jacob Kjaer-Larsen; 22/2 1921-9/5 1958.
AU   PETERSEN P B
SO   Ugeskr. laeger, (1958 May 22) 120 (21) 684-5.
LA   Danish
FS   OLDMEDLINE
OS   CLML5834-62430-424
EM   195812
NA   KJAER-LARSEN J A C O B


=> s  fagales allergen and IgE binding

L10          2 FAGALES ALLERGEN AND IGE BINDING

=> d l10 all 1-2


L10  ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2000 ACS
AN   1999:614141  CAPLUS
DN   131:241995
TI   Mutant recombinant allergens for use as allergy vaccines
IN   Ipsen, Hans Henrik; Spangfort, Michael Dho; Larsen, Jorgen Nedergaard
PA   Alk-Abello A/S, Den.
SO   PCT Int. Appl., 77 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
IC   ICM  C12N015-29
     ICS  C12N015-12; C07K014-415; C07K014-435; A61K039-35; A61K039-36
CC   15-9 (Immunochemistry)
     Section cross-reference(s): 3
FAN.CNT 1
     PATENT NO.        KIND  DATE          APPLICATION NO.  DATE
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PI   WO 9947680         A1   19990923      WO 1999-DK136    19990316
        W:  AE, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU,
            CZ, CZ, DE, DE, DK, DK, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM,
            HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
            LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD,
            SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU,
            ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
        RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK,
            ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,
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CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
AU 9927147 A1 19991011 AU 1999-27147 19990316
PRAI DK 1998-364 19980316
WO 1999-DK136 19990316
AB Novel recombinant allergens are disclosed. The allergens are non-naturally occurring mutants derived from naturally-occurring allergens. The overall .alpha.-carbon backbone tertiary structure is essentially preserved. Also disclosed are methods for prepg. such recombinant allergens as well as uses thereof. The invention is based on the idea that the mechanism of successful allergy vaccination is not an alteration of the ongoing Th2-type immune response, but rather a parallel initiation of a new Th1-type immune response involving tertiary epitope recognition by B-cells and antibody formation. Addnl., dominant **IgE binding** epitopes are proposed. These epitopes are supposed to be constituted by tertiary structure dependent coherent surface areas large enough to accommodate antibody binding and conserved among isoallergens, variants, and/or homologous allergens from related species. Mutant forms of Bet v 1 and Ves v 5 allergens were produced. The Bet v 1 mutants displayed reduced **IgE binding** although the tertiary structure of the wild-type Bet v 1 allergen was retained. A "triple-patch mutant" of Bet v 1 was able to induce proliferation in T cell lines from 3 different birch pollen allergic patients with stimulation indexes similar to recombinant and naturally occurring Bet v 1.
ST allergy vaccine allergen mutant B cell epitope **IgE binding**; Bet v 1 allergen recombinant mutant allergy vaccine; Ves v 5 allergen recombinant mutant allergy vaccine
IT Epitopes
(B cell, mutation of; mutant recombinant allergens for use as allergy vaccines)
IT Allergens
RL: BPN (Biosynthetic preparation); BPR (Biological process); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(Bet v I (Betula verrucosa, I); mutant recombinant allergens for use as
allergy vaccines)
IT Immunoglobulins
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(E, binding of, redn. of; mutant recombinant allergens for use as allergy vaccines)
IT Ant (Formicidae)
(Formicoidae; mutant recombinant allergens for use as allergy vaccines)
IT Dicotyledon (Magnoliopsida)
(Oleales; mutant recombinant allergens for use as allergy vaccines)
IT Monocotyledon (Liliopsida)
(Poales; mutant recombinant allergens for use as allergy vaccines)
IT Allergens
RL: BPN (Biosynthetic preparation); BPR (Biological process); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(Ves v 5 (Vespula vulgaris, V); mutant recombinant allergens for use as
allergy vaccines)
IT Animal
Apidae
Asterales

Blattaria
Cat (Felis catus)
Dermatophagoides
Dog (Canis familiaris)
Fagales
Horse (Equus caballus)
Hymenoptera
Pinales
Pollen
Urticales
Venoms
Wasp
(**allergens**; mutant recombinant allergens for use as allergy vaccines)

IT Vaccines
(allergy; mutant recombinant allergens for use as allergy vaccines)

IT Tertiary structure
(maintenance of; mutant recombinant allergens for use as allergy vaccines)

IT Allergy inhibitors
(mutant recombinant allergens for use as allergy vaccines)

IT Allergens
RL: BPN (Biosynthetic preparation); BPR (Biological process); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(mutant recombinant allergens for use as allergy vaccines)

IT Protein sequences
(of Bet v 1 and Ves v 5 mutants)

IT 244065-79-0P 244065-81-4P 244065-82-5P 244065-83-6P 244065-84-7P 244065-85-8P 244065-86-9P 244065-87-0P 244065-88-1P 244065-89-2P 244065-90-5P
RL: BPN (Biosynthetic preparation); BPR (Biological process); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(amino acid sequence; mutant recombinant allergens for use as allergy vaccines)

IT 244179-41-7, PN: WO9947680 FIG: 3 unclaimed DNA 244179-50-8, PN: WO9947680 FIG: 3 unclaimed DNA 244179-51-9, PN: WO9947680 FIG: 3 unclaimed DNA 244179-52-0, PN: WO9947680 FIG: 3 unclaimed DNA 244179-54-2, PN: WO9947680 FIG: 3 unclaimed DNA 244179-56-4, PN: WO9947680 FIG: 3 unclaimed DNA 244179-57-5, PN: WO9947680 FIG: 3 unclaimed DNA 244179-58-6, PN: WO9947680 FIG: 3 unclaimed DNA 244179-59-7, PN: WO9947680 FIG: 3 unclaimed DNA 244179-60-0, PN: WO9947680 FIG: 3 unclaimed DNA 244179-61-1, PN: WO9947680 FIG: 3 unclaimed DNA 244179-62-2, PN: WO9947680 FIG: 3 unclaimed DNA 244179-64-4, PN: WO9947680 FIG: 13 unclaimed DNA 244179-67-7, PN: WO9947680 FIG: 13 unclaimed DNA 244179-68-8, PN: WO9947680 FIG: 13 unclaimed DNA
RL: PRP (Properties)
(unclaimed nucleotide sequence; mutant recombinant allergens for use as allergy vaccines)

RE.CNT 6
RE
(1) Ferreira, F; FASEB JOURNAL FOR EXPERIMENTAL BIOLOGY 1998, V12(2), P231 CAPLUS
(2) Hoffman, D; JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY 1993, V92(5), P707 MEDLINE

(3) Smith, A; CLINICAL AND EXPERIMENTAL ALLERGY 1997, V27(5), P593 CAPLUS
(4) Spangfort, M; INTERNATIONAL ARCHIVES OF ALLERGY AND IMMUNOLOGY 1997, V113(1-3), P243 CAPLUS
(5) The Rockefeller University; WO 9733910 A 1997 CAPLUS
(6) Wiedemann, P; JOURNAL OF BIOLOGICAL CHEMISTRY 1996, V271(47), P29915 CAPLUS

L10 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2000 ACS
AN 1993:232158 CAPLUS
DN 118:232158
TI Four recombinant isoforms of Cor a I, the major allergen of hazel pollen, show different **IgE-binding** properties
AU Breiteneder, Heimo; Ferreira, Fatima; Hoffmann-Sommergruber, Karin; Ebner, Christof; Breitenbach, Michael; Rumpold, Helmut; Kraft, Dietrich; Scheiner, Otto
CS Inst. Gen. Exp. Pathol., Univ. Vienna, Vienna, A-1090, Austria
SO Eur. J. Biochem. (1993), 212(2), 355-62
CODEN: EJBCAI; ISSN: 0014-2956
DT Journal
LA English
CC 15-9 (Immunochemistry)
Section cross-reference(s): 3, 11
AB Previous studies showed that pollens from trees of the order Fagales (e.g. birch, alder, hazel, and hornbeam) all contain 1 major allergen. These proteins are cross-reactive among these tree species , and .apprx.95% of tree-pollen-allergic patients display **IgE binding** to these allergens. Using the reported N-terminal amino acid sequence of the hazel pollen allergen Cor a I, it was possible to amplify Cor-.alpha.-I cDNA by use of PCR. Four clones with cDNA inserts were isolated. All 4 clones contained an open reading frame of 477 nucleotides (159 amino acids) but differed in length for their 3'-non-coding regions. Within the overlapping regions, the nucleotide sequence of the 3'-non-coding regions of the 4 clones were nearly identical. The open reading frames coded for different isoforms of the major hazel pollen allergen, Cor a I. The clones were designated Cor a I/5, 6, 11 and 16, resp. Comparison of the deduced amino acid sequences of these Cor a I isoforms revealed identities of 96-99%. The sequence identities between the Cor a I isoforms and Bet v I, the major birch pollen allergen, were 71-73% (80.5-83% similarity). Comparing amino acid sequences of Cor a I isoforms with the published sequences of Aln g I, the major allergen from alder, and Car b I and isoforms, the major allergen from hornbeam, 75.5-76.7% identity (83.6-85% similarity) and 83.6-89.9% sequence identity (89.3-95% similarity), resp., was found. The 4 Cor a I cDNAs were subcloned into plasmid pKK223-3 and expressed in Escherichia coli as non-fusion proteins; their capacity to bind serum IgE from tree-pollen-allergic patients was investigated. The 4 cloned isoforms showed an apparent mol. mass of 17 kDa in SDS/PAGE, identical to the natural, pollen-derived Cor a I. IgE antibodies from tree-pollen-allergic patients reacted with all 4 recombinant isoforms. However, marked differences were noted in the **IgE-binding** patterns of the distinct isoforms. Furthermore, Cor a

I/11 was the only isoform recognized by the anti-(Ber v I) monoclonal antibody, BIP 1. These results demonstrate that Cor a I isoforms display different antigenic and allergenic properties, very likely due to few but significant changes in their amino acid sequences. These findings have implications for the development of reagents for diagnosis and immunotherapy for type I allergies.

ST hazel pollen allergen isoform; Corylus major allergen I sequence

IT **Fagales**
(**allergens** of pollen of, human IgE to, hazel major allergen I isoforms reactivity for)

IT Protein sequences
(for allergen I isoforms of hazel)

IT Immunoglobulins
RL: BIOL (Biological study)
(E, to allergen I of hazel, of humans, isoform reactivity of)

IT Deoxyribonucleic acid sequences
(complementary, for allergen I isoforms of hazel)

IT Allergy
(immediate hypersensitivity, IgE to tree pollen of humans with, hazel major allergen I isoform reactivity of)

IT 143066-17-5, Allergen Cor a I (hazel isoform 1) 143066-18-6, Allergen Cor a I (hazel isoform 2) 143066-19-7, Allergen Cor a I (hazel isoform 3) 143066-20-0, Allergen Cor a I (hazel isoform 4)
RL: PRP (Properties)
(amino acid sequence of)

=> logout

LOGOUT IS NOT A RECOGNIZED COMMAND
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For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=>

---Logging off of STN---

=>
Executing the logoff script...

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